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LARYNGISMUS PARALYTICA ("ROARING").*

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AMONG the many diseases which affect the horse, those of the respiratory organs perhaps demand the most attention, if we except those which cause lameness. The respiratory apparatus of this animal is so developed, and its healthy condition is so essential to the successful utilisation of its powers, whether employed for strength or speed, or both, that in every part of the world where it has been employed, and from the earliest times, the perfect functional activity of the breathing mechanism has always been looked upon as an absolute necessity. When the respiration has been more or less impaired, then speed has diminished in proportion, and the strength could not be fully employed; consequently, horses, no matter what their value may previously have been, no longer commanded their former price, nor retained their renown.

Of the morbid conditions which more or less impair the function of respiration, and therefore depreciate the services and marketable value of horses, none possess so much interest, perhaps, as those which not only impede respiration, but indicate the presence of impediment by giving rise to abnormal respiratory sounds, the majority of which are familiar to most horsemen,

* Read at the Meeting of the Midland Veterinary Medical Association, held on October 28th, 1881.

though they are generally grouped under one popular, but far from expressive or elegant designation, that of "Roaring." The term is often employed as if it indicated a disease. But, as Percivall tritely remarks, "Roaring is no more a disease in horses than crying is in ourselves; it is but a symptom, and of itself so vague a one, that without careful investigation it is often as difficult to say what disorder is producing it as to divine the cause of a person's grief." And he adds: "Roaring may be defined to be breathing with a loud or unnatural sound, under exertion of any kind."*

The cause of abnormal sounds in respiration is primarily the collision of the column of air as it enters or leaves the air-passages, or both, against some obstacle which diminishes the calibre of one or more of these canals. But the obstacles may be almost innumerable, and may be encountered at any part, from the entrance to the nasal cavities to the ultimate ramifications of the bronchial tubes. For instance, we may have noise produced from non-dilatation of one or both nostrils, due to loss of function of the seventh pair of nerves; to obstruction of the nasal cavities by fracture of the bones, tumours, polypi, abscesses, inflammation of mucous membrane, and other alterations in this region; to paralysis of the pharynx, tumefaction, œdema, abscesses, tumours, polypi, or inflammation and its consequences, in or about the larynx, or distortion of that important structure; to paralysis of the laryngeal muscles; disease or distortion of the trachea; the changes brought about by bronchitis and pneumonia, etc.

History.

All these immediate causes of noisy respiration have been observed, each with more or less frequency, and in all the domesticated animals, as well as in mankind. But, as has been said, owing to the great importance of the horse for riding and draught purposes, and the necessity for the respiratory function being as perfect as possible, the presence of such a defect as obstructed breathing, which was not only detrimental to the animal but very disagreeable, to say the least of it, to those employing him, has for the last three hundred years occupied the

* Hippopathology, vol. ii., p. 36.

attention of horsemen and veterinarians. Among the most notable of these in the centuries preceding the nineteenth, were, in France :—Solleysel,* who was the first to describe horses who emitted this sound in respiration as *siffleurs;* Lafosse,† who speaks of such a horse as a *cornard*, or siffleur ; Bourgelat,‡ the founder of modern veterinary medicine, whose remarks are not without interest even now ; Huzard,§ who wrote a special monograph upon it ; and Flandrin,‖ who consecrated an instructive article to it in an excellent work written by him ; as well as papers by Gohier, Fromage de Feugré, and others. During this century, and more especially in recent years, diseases of the respiratory organs, and particularly those which lead to the production of abnormal sounds, have been very carefully studied in France, and especially by Godine, Hurtrel d'Arboval, Dupuy, Vatel, Bouley, Goubaux, Trasbot, and others.

With regard to Germany, I cannot discover that much was done towards the elucidation of the pathology of abnormal sounds until Gurlt¶ in 1832, and Günther in 1834,** began to investigate their cause. Since then, the many excellent treatises on Veterinary Pathology which have appeared have dealt with it more or less thoroughly.

As for England, up to and during the eighteenth century, the crudest and oftentimes most fantastic notions prevailed with regard to the causes of defective respiration, as a reference to any of the old works on Farriery will show. Gibson,†† at the commencement of the eighteenth century, remarks : "We may observe that horses that have no inward infirmity blow and wheeze, from an imperfection in the passages between the nose and mouth, which happens the more readily to horses, as they draw in and expel their breath chiefly at the nose. . . . . A horse will cough pretty often, but especially upon every slight cold, and at the same time is frequently troubled with a wheezing and rattling in his pipes :

* Parfait Marechal, Paris, 1754.
† Dictionnaire d'Hippiatrique, 1765.
‡ Encyclopédie, Article "Cornage," Paris, 1762.
§ Mémoire sur le Cornage, 1783.
‖ Instructions Vétérinaire, 1795.
¶ Pathologische Anatomie, 1832.
** Ueber Hartschnaufen, Hanover, 1834.
†† The Farrier's New Guide, 4th edition, 1725.

all which proceeds from a thick mucilaginous matter sticking in the branches of the wind-pipe." Bracken,* another popular writer of the farrier class, like all those who preceded and many who followed him, confounded several disorders as causing defective respiration, and mentions hissing or whistling sounds as characteristic of "pursiveness," and "broken wind." It is not until we reach the present century that we find "Roaring" mentioned, and the term was probably introduced by jockeys or farriers, who have given us many of the absurd or comical names met with, even at the present day, in our professional literature. White, in 1802, in speaking of "Roaring," says: "This disease takes its name from a peculiar sound in respiration, particularly when the horse is put into a brisk trot or gallop. It seems to arise from lymph that has been effused in the wind-pipe or its branches, which becoming solid, obstructs, in a greater or less degree, the passage of air."† Later, the same writer states: "There is another complaint of the lungs, or parts connected with them, and an incurable one, which the purchaser should be guarded against. This disease is named *Roaring*, from the wheezing noise a horse makes when rode fast, particularly when galloped up a hill: it is sometimes so considerable as to be heard at a distance of many yards; but in walking, or moderate exercise, it can seldom be perceived. The method which dealers usually employ to detect this complaint at a repository, where no other trial allowed, is to whip the horse under the belly, and make him turn suddenly, or by making him leap over the bar; if he is a roarer, this sudden exertion causes him to groan. But this criterion should never be depended upon, when an opportunity offers of galloping the horse."‡

Youatt, Field, Percivall, Ferguson, Turner, and others have attempted, with more or less success, to throw light on this very important subject, but it is evident that some confusion and uncertainty, if not mystery, still prevails with regard to it; and it is with the view of assisting in dispelling these that I now venture to bring it before the profession. For surely our know-

* A Complete Treatise upon the Art of Farriery, London, 1752.
† A Compendium of the Veterinary Art, 1802.
‡ A Treatise on Veterinary Medicine, vol. iii., p. 257.

ledge of anatomy, physiology, and pathological processes should be sufficiently advanced, at this period of our history, to furnish us with the facts by which we may settle the question.

Pathology.

As I have already mentioned, noisy, and therefore impeded respiration, is due to any obstacle interfering with the passage of the air through the channels between the nostrils and the lungs. These obstacles may be many and various, and are chiefly alterations and accidents occurring in different parts of the respiratory apparatus; while the sound emitted may range from the faintest *souffle* to the most strident tone or acute whistle or scream—depending on the degree or extent of obstruction.

Among the causes which produce what we may call "chronic roaring" (if we must retain this objectionable word), as distinguished from "acute roaring," which often disappears with the disease producing it, by far the most constant and remarkable is that to be found in the larynx, and dependent upon atrophy or fatty degeneration of certain muscles on the left side of that cartilaginous box. This chronic "roaring" is intermittent, being imperceptible while the horse is at rest, but becoming developed during sudden inspiration, rapid movement, or severe exertion; and the sound is by far the loudest during inspiration, being but little, if at all, modified or disturbed during expiration.

I have said that chronic "roaring" of this description is most constantly found to be immediately due to atrophy or fatty degeneration of certain muscles of the larynx, and I may state that during the practice of my profession for more than a quarter of a century, my opportunities for observation and dissection of horses which had been "roarers" for variable periods of time, have led me to the conclusion that this, in at least ninety-nine per cent. of *all* cases, is the immediate cause. And this also appears to be the experience of several careful observers—at least in recent times.

So long ago as 1817, Godine found deformity of the larynx to be a cause of "Cornage,"* Bouley made a similar observation in 1821;† and Dupuy describes cases in which the glottis

* Eléments d'Hygiène, 1817.
† Compte Rendu d'Alfort, 1821.

was narrowed and deformed through depression of the left arytænoid cartilage.*

In 1825, the first step towards elucidating the pathology of this laryngeal paralysis which gives rise to "roaring," was made by that close observer and distinguished veterinarian, Bouley. In dissecting the carcase of a horse that had been so affected, he found considerable engorgement of the lymphatic glands at the entrance to the chest, and the left recurrent nerve which passed through them was compressed and altered in its structure. He had at first imagined that the "roaring" had been the result of deformity of the trachea; but the coincidence of "roaring" with this condition of the nerve decided his opinion.† This most important clinical observation was the point of new departures in investigations into the cause of the affection, and soon brought out the experiments of Dupuy, who, in the same year, by dividing the pneumogastric or recurrent nerves, constantly produced the peculiar sound, together with the paralysis and wasting of the laryngeal muscles with which we are now so familiar.‡

In 1834, Professor Günther, then director of the Veterinary School at Hanover, in a paper on the causes of roaring, published in Nobel and Vix's professional journal,§ and afterwards reprinted as a monograph,‖ states that it is due to wasting of the muscles on the left side of the larynx, owing to loss of function of the recurrent nerve on that side; as since January, 1830, he had found that division of this nerve produced the morbid changes and sound.

But when Percivall published his *magnum opus* in 1840, opinions were much divided as to this being the case. He thought, so far as the larynx is concerned, that "roaring" in young horses was due to thickening, with occasional ulceration, of the laryngeal mucous membrane. He also mentions bands of lymph across the larynx, or ossification or distortion of it or the windpipe. But he likewise mentions wasting of the muscles on

* Recueil de Méd. Vétérinaire, 1825.
† *Ibid.*, p. 380.
‡ *Op. cit.*
§ Zeitschrift für Thierheilkunde und Viehzucht, Band 1.
‖ Ueber Hartschnaufen, Hanover, 1834.

one side of the larynx as an occasional cause,* though he tries to explain this wasting, to the horse having had a hard and soft side to his mouth, and therefore carried his head more to one side than the other, thereby distorting the larynx. But previous to this period, Youatt, in his lectures on horses, in speaking of roaring and its causes, remarks: "In the far greater number of cases there is distortion, rendering the muscles on one side useless, and therefore causing them to waste away. . . The wasting of the muscles is therefore the *effect*, and not the *cause*, of that which produces roaring."† John Field thought a frequent cause of roaring consisted in ulceration of the rima glottidis, which produced spasm of the glottis. Nevertheless, in 1837, he experimentally produced roaring in a horse, and demonstrated the cause of the laryngeal muscular atrophy.

He says: "Having ascertained that the organs of respiration of a horse used for farm-work were sound, I cast him, and laid bare the recurrent nerve of the off-side, and passed a ligature loosely around it: he was then allowed to get up, and, after a few minutes, galloped severely without evincing the slightest defect in his breathing. The nerve was then drawn out by the ligature, and one inch and a-half of it excised; and immediately, on only trotting the horse a short distance, such a degree of roaring was occasioned that, had the exertion been continued, he would soon have fallen. I kept this horse four years, and though his breathing became much better, he continued a sad roarer. At the end of that time I destroyed him for the larnyx, which exhibited the usual condition of wasted muscles on the side deprived of the influence of the recurrent nerve."‡

In 1838, Hugh Ferguson, now of Dublin, at the autopsy of a horse which had been a roarer for a long time, found one of the recurrent nerves enveloped and compressed by a voluminous and

* "Some years have now elapsed since it was first discovered that the larynges of roarers occasionally presented us with the singular phenomenon of the muscles on one side being wasted away or absorbed, while, on the other, they appeared to exhibit unusual volume and redness, and strength of fibre. Since the first discovery, everyone almost has met with cases of the kind; but no person seems as yet to have given an explanation of this new piece of pathology."—*Op. cit.*, p. 44.

† *The Veterinarian*, vol. , p. 183. ‡ *Ibid.*, 1837.

indurated bronchial lymphatic gland ; while the remainder of the nerve situated between the gland and the larynx was quite different to that on the opposite side, being greatly wasted, and its fibres scarcely distinguishable. All the laryngeal muscles which received filaments from this nerve were so completely atrophied, that it was difficult to recognise their structure ; the glottal opening was twisted, and the borders of the arytænoid cartilage partly obstructed it.*

In 1846, Lafosse relates the case of a horse which, at first manifesting "roaring" at intervals, at length was continuously affected ; dyspnœa became progressively more marked, until, during a violent attack, he died asphyxiated. At the autopsy the bronchial lymphatic glands were extremely enlarged, brownish in colour, indurated, adherent to each other and the lungs, and containing pus at various points ; while the pneumogastric nerves were compressed in them and almost confounded in their mass.†

Goubaux, now Director of the Alfort Veterinary School, in 1848 gives a brief account of the alterations observed in the larynx of horses which had been roarers ; and in a communication to the Société de Biologie in 1853, unconscious of what had previously been accomplished in this research, pointed out the fact that in chronic "roaring," muscular atrophy on the left side of the larynx was nearly a constant feature. In 1864, in another communication to the Société Vétérinaire, he further confirms the fact, and asserts he had never found an exception to the rule, and had always observed the left muscles and recurrent nerve atrophied in an advanced degree. Professor Trasbot, also of the same school, from the time when Goubaux had first drawn attention to the matter, up to 1879, had examined, when he had the opportunity, the larynx of every horse that was known to have been a "roarer," and always found the muscles of the left side affected.‡

In a work on the topographical myology of the horse, published in 1866 by Professor Günther, it is stated that ninety-six per cent. of the horses affected with chronic "roaring," have wasting

* *The Veterinarian*, 1838.
† Journal des Vétérinaires du Midi, 1846.
‡ Archives Vétérinaire, 1879.

of the muscles on the left side of the larynx, it being exceedingly rare to find those on the right side involved.*

I therefore assume that the condition popularly known as "roaring," and the consideration of which is of such vast importance to horsemen, but especially to veterinary surgeons, who have to deal with it not only from a medical and surgical, but also from a jurisprudence point of view—is due to a defect in the larynx, characterized by atrophy, or, rather, fatty degeneration, of certain muscles on the left side of that organ And in now discussing its pathology, I leave out of consideration any other accidental and infrequent mechanical impediments which have no relationship to this laryngeal paralysis.

In man, and nearly all other animals, the larynx has two essentially different functions, one of which is the production of sound or voice, and the other to provide a perfectly free and patent canal for the passage of air to and from the lungs. For these two functions special muscles are provided: for the production of sound or voice, the muscular arrangement within the larynx is relatively complicated; but for respiration nothing could be simpler—only one pair of muscles, and these by far the most powerful in the larynx, the posterior crico-arytænoid, being in reality those employed in that division of the act. This pair of large muscles, situated behind the larynx, and arising from the cricoid cartilage to be inserted into the arytænoid cartilages which stand over the entrance to this air-conduit, are alone, of all the laryngeal muscles, those concerned in respiration. For it must be remembered that the larynx dilates in proportion to the volume of air required to pass through it. This pair of muscles, in contracting, widen the entrance to the larynx, by causing the arytænoid cartilages to swing or rotate on the cricoid cartilage, with which they articulate, separating them from each other by their anterior and inferior borders. The larynx is always more or less open—less in ordinary respiration, most in hurried and deep inspiration; therefore these muscles are always in action as elevators of the arytænoid cartilages, but most powerfully so in inspiration, and especially when this is forcible, as during rapid or energetic movements.

* Die Topograpische Myologie des Pferdes, Hanover, 1866.

The lateral crico-arytænoideus, thyro-arytænoideus, and arytænoideus, are all constrictors, and therefore antagonistic muscles to the dilators, and are more or less directly concerned in the production of voice, or the violent expulsion of air from the lungs. So that while the dilators are always in a state of contraction, to widen the larynx and dilate the aperture of the glottis, by maintaining the arytænoid cartilages erect, in order that the air may pass in quite freely, the constrictors, or those muscles which act on the vocal cords, are only intermittent in their action, and do not, unless in a state of sudden spasm, affect the respiration. The horse, it may be said (particularly when emasculated), has no voice, and therefore the paralysis of these muscles, and which leads to the different morbid conditions marked by aphonia, does not come under the cognizance of the veterinary surgeon; though we may infer that such paralysis does occur—indeed, we have evidence of it in such animals as the dog, in which we may have the bark altered in tone, diminished in intensity, or altogether lost, without respiration being much, if at all, disturbed. It is much to be regretted that, owing to the great length of the horse's face and other causes, the laryngoscope, which has yielded such great benefit in the hands of the surgeon, cannot be made available for the veterinary surgeon, who is often urgently in need of some means by which he might secure a visual inspection of the larynx in the living animal.

Owing to the simplicity of arrangement of the pair of respiratory muscles of the larynx, paralysis of one or both is always marked by the same symptoms—impeded, difficult, and sonorous respiration; and of all creatures, solipeds, especially the horse species, appear to offer these symptoms most frequently.

When paralysis of one or both dilators has taken place, due to loss of conductibility of the recurrent nerves, one or both of the vocal cords approach nearer the middle line of the larynx, owing to loss of power of the antagonistic muscles, which, when they contract in health, in reality separate these cords. But respiration is not impeded if the animal is kept at rest, as the glottal opening is always sufficiently wide to meet the demands of ordinary respiration. It is not so under increased movement or exertion, however, as then the position of the vocal cords does not admit

of the increased demand for air, and consequently there is more or less dyspnœa.

When we examine the larynx of a horse which has been a "roarer," we, as a rule, do not find any thickening or ulceration of the mucous membrane, or any other of those alterations which various authors have described. But we notice, if the case had been one of long standing, that the larynx is more or less deformed—that is, twisted from left to right, with distortion of the glottis, and narrowing of the laryngeal opening. But the most marked feature is the atrophy of the left posterior crico-arytænoid muscle or its partial or total degeneration. Perhaps it may only be somewhat reduced in bulk, and paler in tint than its fellow on the opposite side: this is the case when roaring—the symptom—is recent. In more advanced cases, however, the muscle is yellowish (fatty degeneration of the fibres), and much smaller; or in extreme cases it may have entirely disappeared, only a small quantity of fatty tissue being left in its place; while the opposite muscle (the right) appears hypertrophied, and of a brighter red colour than usual, as if its function had been increased to compensate for the disappearance of its fellow. The distortion is progressive with the change that takes place in the dilator muscle, and is due to this change. In very advanced cases, during the life of the animal, the distortion is so great that careful manipulation in the upper part of the neck will lead to the detection of the depressed arytænoid cartilage on the left side, which makes the larynx feel as if it had fallen in, or was deeper seated, when compared with the right side.

The constrictor muscles of the same side may or may not be involved in the degeneration—if not at the commencement, they usually are at a later period. In rarer instances we have the right dilator affected; but this is so infrequent that we have every reason to attribute it to another cause than that which generally operates in the production of roaring. Looking at the muscular lesions, without reflection one might reasonably conclude that the disease was essentially myopathic in its nature—*i.e.*, consists solely in change in the muscular tissue of the larynx. But though in exceptional cases it may be so—as when "roaring" appears after a horse has worn the tracheotomy tube for a long time, and

the laryngeal dilators have become atrophied through being thrown out of use—yet I entertain no doubt whatever that, in the great majority of cases, it is entirely neuropathic in its origin—*i.e.*, dependent on nerve change, the muscular degeneration being a result of such change.

(*To be continued.*)

"TUBERCULAR STOMATITIS."

BY J. C. JAMES, M.R.C.V.S., THORNBURY, GLOUCESTERSHIRE.

IN answer to Mr. Metherell's question, asking if I still cut or scrape the tongue in the above disease, I beg to state that I do not. I have found the application of the Tinct. ferri perchlor., or Liq. ferri perchlor. fort., diluted, to effect a cure, as a rule. I like the last-named in very severe cases. It may appear to some to be a very strong application for the tongue, viz., Liq. ferri perchlor. fort., diluted with only two parts of water; but I can assure them that in my experience it has acted admirably. Only at the commencement of treatment is it necessary to dress every day; after a week, once in two or three days may be sufficient, but I leave that to the discretion of the practitioner, who will be guided by the appearance of the tongue and the progress the case is making; also to further dilute his dressing, if necessary.

I have seen good results follow from the occasional use of Argenti nitras, used in the platinum caustic holder, and freely applied to the ulcers, the animal's mouth having been previously gagged. I never cast a beast for examination or dressing for this disease. I quite agree with Mr. Metherell, that some cases are protracted and troublesome to treat; but I find many owners very unwilling to have the animal destroyed, and don't mind trouble if there is a probability of recovery. I instruct them how to dress the parts, supply them with the dressing, and see the animal occasionally, so as not to make it too expensive. I always order some extra nutritive food, and I find after two or three dressings there will be great improvement in the animal's feeding; the tongue will be hardened, and the abnormal sensitiveness destroyed. It was about

eight or nine years ago I began to use the preparation of iron dressing, and discovered its beneficial effects in this disease through the owner of an animal persisting in having (to me) a hopeless case treated. To my astonishment, the animal recovered after a long time—three months or thereabout; and made a good fat beast. That case decided my future treatment, and the results have quite justified the course taken.

In my former communication, I alluded to two cases I then had under treatment. I might say they have made great progress, although they were neglected by their owners, and the treatment was not regularly carried out. One is a valuable shorthorn bull, purchased at the Birmingham show of shorthorn bulls, 1880. This will be an interesting case, as the owner persists in allowing him to serve all his cows, contrary to my advice.

There is one lot of calves dropped this year (1881) sired by the said bull, and I shall have every opportunity of watching those calves as they grow up, and noting if they show any particular form of disease allied to the baneful disorder of the tongue I have been writing about.

I am sorry, Mr. Editor, I cannot forward you any specimens of the diseased parts from the two cases I have under treatment, as the parts are so altered by this treatment as not to afford reliable material for proper examination and experiment. Should I get a fresh case I will not fail to send you some of the diseased material at the earliest opportunity.

THE OPERATION OF LITHOTOMY.

BY W. S. ADAMS, M.R.C.V.S., A.V.D., REMOUNT DEPOT, COSSOOR, INDIA.

I BEG to send an account of an operation of Lithotomy successfully performed on a horse at the Remount Depôt, Cossoor. The case is, I think, of great interest, both on account of the rarity of the operation in veterinary surgery, and also on account of the success attending the use, under urgent circumstances, of a rude instrument to crush the calculus. I trust, therefore, space will

be found for its insertion in an early number of the VETERINARY JOURNAL.

A black Waler gelding, aged four years, had been observed for some time to micturate frequently, and in small quantities. I took him into the sick-lines for observation. There was an incontinence of urine, and occasionally the horse would stretch out and strain violently, but pass only a small quantity of urine, with evidence of great pain. The hind fetlocks were scalded by the continual dripping of the urine on them. I procured some of the fluid for examination, and tested it both microscopically and chemically, and found it to contain a copious heavy sediment composed of earthy phosphates and oxalate of lime. I therefore suspected the presence of cystic calculi either in the bladder or in the urethra. I threw the horse for examination, and on passing my arm up the rectum I detected a calculus of great size in the bladder. Of course, in manipulating through the rectum and bladder the apparent size of the calculus might be deceptive; therefore, to avoid exaggeration, I estimated it as "large as a cricket ball."

I reported the case to the Inspecting Veterinary Surgeon, as he was about to visit the depôt while attending the Annual Committee on Remounts; and the symptoms manifested not being urgent, a decision with regard to the disposal of the case was left in abeyance.

The horse could not be sent to the service in the state he was, and lithotomy being the only cure, it was decided to operate as soon as possible, as the horse was now commencing to fall away in condition. Dr. Evans was good enough to procure a case of lithotomy instruments from Calcutta. In such a serious operation I applied for the assistance of two veterinary surgeons—one to assist in the operation, and the other to watch the chloroform; this application was supported by the Inspecting Veterinary Surgeon, Dr. Evans. However, only one veterinary surgeon was available, and Veterinary Surgeon Murray Anderson was ordered out from Bangalore. On September 27th, after examination and consultation, we threw the horse on the near side, and after releasing the off hind leg from the hobbles, drew it well up to the collar.

After putting the horse under the influence of chloroform, we introduced the probe into the urethra, and made a longitudinal incision in the perinæum, about midway between the anus and the ischial arch, cutting into the urethra on to the groove in the probe. Some difficulty was here experienced, owing to the small size of the probe, which did not nearly fill the urethra, and was consequently difficult to remain in one position; therefore it failed to be the guide to the operator the probe is intended to be. However, the incision was made successfully without wounding any of the adjacent arteries. We now enlarged the incision in the urethra by means of the long director and the probe-pointed lithotomy knife. After dilating the neck of the bladder by means of the probe-pointed forceps, we introduced the lithotrite which was supplied in the case of lithotomy instruments. After repeated trials we found that, owing to the great size of the calculus and the small capacity of the lithotrite, we were unable to grasp it, and failed to bring away a fragment. We were now in a somewhat unfortunate predicament, but soon resolved, rather than release the horse and abandon the operation, to endeavour to crush the stone by means of a punch, and we selected a shoeing smith's punch or pritchel, one nearly new, with a flat point and flat-sided to the point. This appeared at first a somewhat rough surgical instrument, but with the large calculus to be broken down it proved most efficacious. We used it in this manner: The left arm being passed into the rectum, the left hand was placed behind the calculus, firmly supporting it; the point of the pritchel was then inserted through the neck of the bladder, and when it was found to be well on the calculus, was struck gently by an assistant with a light hammer. After prolonged exertion, the calculus was completely broken down, and fragment after fragment extracted by means of the spoon-bill forceps and the bullet forceps, assisted by repeated washing, which was effected by means of Read's patent enema syringe, one being selected with a small tube.

After removing what we thought was the whole of the calculus, we found that a fragment still remained in the fundus of the bladder. This resisted all our attempts to extract it, although we frequently grasped it firmly; it was apparently adherent to

the coats of the bladder, which we feared we might lacerate by using force. As the horse had now been under operation for fully three hours, we were reluctantly obliged to allow the fragment to remain.

Having approximated the lips of the wound by a single suture, we discontinued the chloroform and released the horse. He soon came round, and was placed in a large loose box, where he was well bedded down and allowed to remain quiet for some hours. It was a very tedious operation, and tried the patience and perseverance of the operators; and from having been so long in constrained positions, we both felt the effects for some days. Should I ever have to perform the operation again, I should throw the horse on a high bed, or dig a trench behind him after he was thrown, before operating.

The weight of the fragments and *debris* of the calculus extracted was nine and a half ounces, and of course a considerable quantity must have been lost in the repeated washings. Therefore, my estimate of the original size of the calculus was by no means exaggerated. Ten ounces of chloroform were expended, the horse being kept under its influence for fully three hours.

Subjoined is a table showing the temperature and frequency of the pulse, as observed in the morning, at noon, and in the evening from the day of operation till the fifteenth day, when both temperature and pulse became almost normal.* It will be observed that, considering the severity of the operation, there has been less constitutional disturbance than might have been expected. The horse is now in much better health and condition than he was before the operation. After the operation the wound was syringed out frequently with carbolic acid lotion (one part to twenty of water), and the greatest care was taken with regard to cleanliness.

At first the whole of the urine was passed through the wound, but on the fourth day a portion was passed naturally. In spite of the greatest care and attention with regard to cleanliness, there

* The chart referred to shows the temperature to have been, on the day of operation, 104°, pulse, 50; on the following day the temperature fell to 102⅝°, but the pulse was 52; on the fourth and fifth days the temperature was 104¼°, and then, up to the fifteenth day descended at noon to 100⅛°, rising in the evening to 102⅝°, the pulse being 48.

was great scalding and soreness inside the thighs and between the legs.

Large sloughs came away from the wound, and I think it was these that occasionally obstructed the natural flow of urine. On the sixth day after operation, the patient was observed to be in great pain and to be straining violently. The farrier major was at hand, and observed the wound to be blocked by a large slough, in which was imbedded a fragment of the calculus; this he removed, and the horse was at once relieved and passed a portion of the urine naturally. This fragment was doubtless that which we failed to extract at the time of operation; it was an outside piece, and had probably been detached from the coats of the bladder, to which it was adherent, by the inflammatory action set up. On the twentieth day after the operation, the whole of the urine was again passed through the wound. Suspecting some obstruction, I threw the horse and passed the catheter. I found the passage free, but there was still a large wound in the urethra. I took this opportunity of washing out the bladder and making an examination. I could, however, detect no portion of the calculus remaining.

The case has continued to progress favourably. The wound in the perinæum has healed, and the urine is passed naturally and freely, and in considerable quantities. There is now no incontinence of urine as there was prior to the operation; the scalding between the thighs and on the hind legs has healed, and the horse is taking walking exercise morning and evening. The patient may, therefore, now be pronounced convalescent.

[In cases in which excoriation from acrid discharges or urine is likely to occur, we have been uniformly successful in preventing this troublesome, oftentimes serious accident, by painting white lead over the skin. This makes an excellent protective covering.]

EXTRACT FROM A LECTURE ON THE ELEPHANT.

BY J. H. STEEL, M.R.C.V.S., ARMY VETERINARY DEPARTMENT.

THE comparative anatomist gazes with wonder and delight on the elephant: its structure may be thought to result from a union

of the *disjecta membra* of animals most diverse and far separated from each other in the zoological series, so that it is bird-like in the absence of pleuræ and the abdominal position of the testes; whale-like in the arrangement of many of the bones of the face, and even approaches man in the form of the pelvis and the shortness of the cervical vertebræ. It is well worth our while to draw up a list of the principal features of structure which this animal shares with others :—

The *teeth* in their general characters remind us of those of rodents; but for a parallel to the enormous defensive anterior teeth we can refer only to those of ziphius (the sword whale), and the continued production of fresh molars at the posterior part of the series, as the jaw elongates, reminds us also of the toothed whales, and even of animals lower considerably in the scale of vertebrates. Like the molars of the horse, these teeth have much *crusta petrosa*, but in the elephant this binds the teeth together. In accordance with the state of the teeth the temporo-maxillary joint is somewhat rodent-like, while the stomach and intestines remind us strongly of these organs as seen in the rat and horse. While the face is like that of the horse and rat, in some respects it also resembles that of the whale and the tapir. As in the latter animal, there is a remarkable development of the upper lip and nostrils, known as the trunk; as in the whales, the malar arch is very slight, the nasal passage in the skull vertical, short, with rudimentary turbinated bones, and the nasals are very small, the premaxillæ very long and important, and in association with these characters the cervical region very short. In this latter respect, as also in the inferior maxillæ being pointed anteriorly, and the molars extended posteriorly within the ramus, and the skin being thick, it resembles our familiar friend, *sus domesticus*. The thorax consists of a large number of vertebræ, ribs, and sternal elements, reminding us of that of the horse; but it is conical in shape, like that of rodents and carnivora and other animals which move the fore-limbs with freedom for purposes other than progression. And yet the form of the brain (like that of the horse), and the almost complete absence of clavicle, rudimentary coracoid, and enormous scapula, with the "hoof-slippers," like those of the camel, leave no

doubt as to its being an ungulate. Yet this same scapula, and with it the leg and thigh bones, are strangely wanting in finish. are *generalized*, as we anatomists term it; and so also must be set down as general characters the conical form of the chest, with its large number of bones, and man-like pelvis, and the pentadactyl fore-foot (*manus*), together with some indications of what we should term, had they occurred in the horse, imperfections of development, or infantile character, such as the tendency to division of the apex of the heart as seen in dolphins, the persistence of the Eustachian valve, the kidneys lobulated like those of the ox and bear, and the short condition of the sacrum, which consists of only a few vertebræ. Other special features are the enormous facial sinuses in the adult, like those of the ox and owl, the rat-like spine of the scapula, and the semi-plantigrade progression. The excretory apparatus of the liver resembles that of the horse, but also, like that of the giraffe, has a dilatation against the duodenum. The uterus somewhat resembles that of the mare, but the placenta is zonary; as in carnivora the external generative opening of the female is remarkably far forward, and the mammæ are pectoral, like those of the woman and the bat. The radius very remarkably crosses the anterior surface of the enormous ulna. Add to this that the elephant resembles the extinct monsters of old in the hugeness of his bulk, and we may well ask ourselves how we shall, through this almost endless complication and mixture of characters, trace such an animal in its relations to the other mammalian inhabitants of the globe? We have seen that there can be no doubt as to the ungulate characters, though they are intermingled with the generalised. And so we learn that the elephant, "as one born out of due time," is a near relative of those generalised pentadactyl ungulates, the progenitors in ages long past of the hoofed animals of the present day. The elephant is an anachronism, but a noble one, which has happily been preserved for our use in the present day by some of the wonderful features of structure which we have just noticed. Without his huge weight, his upright limbs, short strong neck, and large weighty skull, hollowed out by sinuses, he could not have rambled through the dense jungle which protects him; without his huge plantigrade feet, his tusks, and the

irregular facial tissues by which the brain is concealed, he would long ago have succumbed to carnivorous foes and to man. His beautiful organ of touch and prehension has atoned for the shortness of his neck, and obtains for him grass, or branches from trees, to a level with which his stature brings him above most other mammalian denizens of the jungle. The nature of his food accounts for the similarities between his alimentary canal and that of the horse and some other herbivora, and that of the bat. Even branches of considerable size crushed between his enormous grinders assist to feed him, for, like rodents, he can obtain nourishment from wood, which, however, generally conduces simply to due repletion of his digestive organs. But why the cetacean characters of the skull? They result from atrophy of the nasal chambers, and can hardly be thought true affinitive indications. This imperfect development of nasal passages accords well with the absence of pleural sac, and the extreme smallness of the nostrils and the length of the nasal passages. Doubtless throughout these passages the odoriferous particles make due impression on the mucous membrane, as the air is slowly drawn in by expansion of the long generalised pleuraless thorax, sufficiently to fulfil the respiratory needs of the animal, which are not great, for the circulatory apparatus is small and infantile, the pulse slow, and the red corpuscles below the mammalian average size. The life changes of the animal, also, are not rapid; excretion is slowly performed by his poorly developed respiratory and renal organs and not excessively large liver nor very active skin, and so we can well understand why, in nature, the elephant, like other slow living animals, attains a great age. Anatomy often leads us to surmise what is confirmed by other lines of observation! Finally, the thickness of the skin protects the other organs alike from sharp stakes and other bodies likely to injure during passage through the jungle, the attacks of leeches, and other external parasites, such as might readily be obtained in marshy parts of the jungle, and in the ponds and nullahs in which the elephant delighteth to gambol. Also with the well-developed panniculus carnosus; like that of the horse, it protects from the teeth of mammalian foes, and from insect enemies, so that the gadfly has to content herself with the tusks on which to deposit her eggs. The

owner of the tame elephant will regret this large development of panniculus, when he finds his fully loaded or *overladen* animal at once free himself from encumbrances by making energetic use of it. The surgeon will not fail to call to mind how frequent are very deeply seated accumulations of pus, the result of injury from the elephant's accoutrements, etc., and the anatomist who has dissected an elephant will, ruefully looking at his spoiled scalpels, show him that this is due to the extraordinary amount of elastic tissue in the elephant, especially supporting the remarkably upright limb pillars. If we would dissect elephants, we must lay in a good supply of butchers' knives, and the surgeon arms himself with a sharp razor! Undoubtedly the peculiarity of the elephant's gait is determined considerably by the amount of elastic tissue in the limbs, as well as by their other anatomical features; the resulting economy of muscular power *must* tell beneficially in a long day's march. He who would make use of the elephant must duly consider that his foot horn is rather a *slipper* than a hoof; he will note the presence of five or four *nails* around the front and part of each side of the rounded or oval main horny plate, which latter is the weight-bearer. It is thin, and made up of "frog-horn," if we may term it so, and well adapted for progress over grass-bottomed jungle and marshy ground; but it is art, not nature, which destines the elephant to crawl over hard roads and stony ground; many a bruise and many a sinus results, and many a valuable animal is lost for want of care as to the ground he has to travel over; many a footsore elephant retards the advancement of our armies in the East. But the mahout is equal to the emergency, and assists nature in surmounting these exceptional circumstances by protecting the sole with a composition, of which he jealously preserves the recipe.

Thus, though the elephant is rodent-like, whale-like, man-like, and owl-like, it is so only in adaptation to its conditions of life; to the same causes may be attributed its special resemblances to the horse, ox, pig, and tapir. In the main it stands isolated as a generalised ungulate, the closest relatives of which have long ago succumbed to the greater energy and higher specialization of the hoofed animals, which we find so well adapted to the present state of our earth.

EQUINE DISTEMPER: INFLUENZA.

BY J. FERRIS, F.R.C.V.S., ARMY VETERINARY DEPARTMENT, ATHLONE.

THE VETERINARY JOURNAL for November has furnished us with much interesting matter. Among the contents I notice some careful observations by Professor Dieckerhoff, of the Berlin Royal Veterinary College, on Equine Distemper.

Although the character and nomenclature of this disease are most certainly subjects upon which professional men may hold different opinions, yet veterinary science teaches us to treat symptoms, and I am inclined to think that too much attention is directed to the nomenclature. It must be confessed that symptoms are frequently disregarded by us, or at all events too little attention is given to this most important question in the treatment of disease.

I had a case last May which I was puzzled to find a name for, but I decided on calling it Catarrhal Fever; and as it was analogous to the cases described by the Professor, perhaps my record may be interesting.

Case 15, F. 18, bay mare, age 8, Fever Catarrhal.

Admitted to horse infirmary May 5th. Off feed, slight cough. Isolate, diet half bran and oats well steeped in hot water, and clothe the body.

6th. Feeds a little; legs cold. Apply flannel bandages.

7th. Slight discharge from nostrils. Steam nasal passages.

8th. Increased discharge from nostrils.

9th. Much worse; pulse 75, respiration 27; great debility; and the horse is already in low condition. Give grass, and Pot. nit. ʒii. in water to drink; foment sides of chest.

6 p.m. Pulse 78, respiration 37; extreme debility; legs swollen; staggers in walking; increased discharge from nostrils of a yellow tinge; mouth hot and clammy; all the mucous membranes much injected. Repeat Pot. nit. ʒii.

10th. Rapidly falling away in condition; pulse 77, respiration 38. Everything connected with the animal to be kept apart. Give Ferri sulph. ʒii. in food, whenever she can be induced to eat.

5 p.m. Feeds a little better.

11th. Great depression; pulse 78, irregular and feeble; respiration 36. Give Ferri sulph. ʒii. morning and evening.

5 p.m. Pulse 65, very irregular and feeble; respiration 29.

This case assumes the character of Influenza, as all the organic structures are more or less affected.

12th. Pulse 63, less irregular; respiration 25; legs less swollen; moves more freely, and takes some green food.

5 p.m. Progressing favourably.

13th. Pulse 62, respiration 25; mucous membranes looking more healthy; walks better; less depression; organs aching; but she is too weak to walk a few yards to graze. The iron appears to have had the desired effect, as she began to improve almost immediately she took it.

5 p.m. Pulse 60, and nearly regular; respiration 23; appetite much improved; swelling fast disappearing from the legs.

This has been a very interesting case, as the head, throat, chest, liver, kidneys, spinal cord, and heart have been involved.

14th. Pulse 57, respiration 17; very weak; still staggers in walking.

15th. Pulse regular, respiration 17.

17th. Discontinue medicine; turn out to graze, if fine, in the daytime.

21st. Eats all her food; improving in condition.

24th. Convalescent.

31st. Discharged cured.

Other cases occurred of a similar nature in this battery of artillery, but in a much milder form. It may be as well to mention that there were bronchial symptoms, and congestion of the lungs; the heart's action was considerably affected, and the kidneys in a lesser degree, as noticed by Professor Dieckerhoff; in fact, none of the abdominal organs suffered so seriously as the respiratory. I wish to point out that most of the organs named by the Professor were more or less implicated in the above case, showing that a disease of a similar nature, in my opinion, existed in these barracks in April and May, 1881, but that it did not spread to any extent, on account of the precautionary measures adopted.

CEREBRO-SPINAL MENINGITIS?

BY C. CLAYTON, M.R.C.V.S., FIRST CLASS, A.V.D., INDIA.

I OBSERVE that Professor Axe has delivered a lecture upon the above-named disease, which is apparently new to England. Permit me to make a few remarks upon the same. I am at present away from the battery record books, or would give fuller details. Other veterinary surgeons more favourably situated, may supply fuller information on a disease which up to this I, with other members of the department, have generally classed among the rheumatismal affections. One distinguished member of the profession has lately assured me that the articular surfaces are invariably the seat of extensive ulceration or destruction of tissue. More complete observations may throw some light on this point. Eight cases of the disease came under my notice at Meerut during the month of August, 1881, the monsoon being at its height about that period; one terminated fatally.

I heard on good authority that several cases were registered at Umballa, nearly all of which were complicated with articular affections.

I am unable to assign any cause whatever; the cases appeared about the same time, without being in the same battery or in the same lines. The quality and quantity of grain or forage did not vary; all the animals were exposed to the same temperature, winds, barometrical changes,—in one word, to the same influences. Neither sex nor age produced any difference. All, without exception, presented that rounded back, that difficulty of locomotion, that peculiar gait to be seen in horses suffering from Laminitis. When feeding, and after having secured a certain quantity of forage between their lips, the animals endeavoured to nip it, more or less general twitching of the muscles ensued; noises made near or around the patients excited them; in this respect they resembled animals I have seen suffering from Rabies. It was with the greatest difficulty they could be got from their stalls to the sick-boxes. Their gait was uncertain and unsteady. If one limb, or a portion of the same, was moved even when the animal was "*en place*," a dry crackling sound was distinctly heard; sufficient in itself, said to me one member of our profession, "to enable me to diagnose the disease."

In all cases petechial spots were present on the visible mucous membranes.

The temperature rose to 104°, never higher. The case that terminated fatally lasted but a few hours, death being caused by the violent injuries produced during the patient's struggles: these latter were such as to render approach most dangerous, and treatment impossible. I made a *post-mortem* examination, but all the parts were so contused and congested that no conclusion could be arrived at. The organs contained in the thorax and abdomen were apparently quite healthy.

The treatment consisted in the liberal administration of Potass. iod. thrice daily, of Ol. lini. as required, of enemas, and Potass. nit. in water, of which a liberal supply was placed at the patient's disposal. Great attention was paid to the state of the bowels, the laxative above mentioned being freely used.

The extremities were kept well hand-rubbed, and the body sponged twenty or thirty times daily with a mixture of vinegar and water.

I may add, that although the temperature rose to 104°, and the disease lasted from five to eight days, the patients did not fall away visibly in condition. I hope these few notes will lead some other members of the profession to give their experience of the same disease.

Editorial.

VETERINARY NOMENCLATURE.

THE great advance which has been made in general and special pathology in recent times, has necessitated not only a revision of medical and surgical nomenclature, but has compelled the introduction and adoption of a great number of new terms to designate conditions or states which previously were not known. In this way the nomenclature of medical science has been immensely increased and improved. As is well known, technical medical terms are nearly, if not always, derived from Greek or Latin, as these languages are understood more or less by all educated scientists over the world, while modern languages are not. Consequently, medical terms derived from the two classical languages just named are readily comprehended by practitioners or professors of medical science everywhere.

Scientific veterinary nomenclature has been borrowed from the sister

branch of medicine when the occasion appeared to require the loan; but it must be confessed that the barbarisms and grotesque, if not unmeaning and vile, terms employed in the days of farriery are still rampant among us, and often bring a blush to the cheek of the educated veterinary surgeon, who must needs resort to such lingo when speaking to his clients or men of education. There are terms in every-day use which are a serious reflection upon us, if we are to lay claim to be a "learned" profession, and perhaps the day is not far distant when an attempt will be made by a Committee of Fellows or of Members, or both, of the Royal College of Veterinary Surgeons, to draw up for us a nomenclature more in harmony with our present position than that which, however well adapted for the "dark days of farriery," is utterly out of keeping with modern views and requirements. What sense can there be in such terms as Splint, Spavin, Ringbone, Stringhalt, Gripes, Thrush, Quittor, Grease, Pole-evil, Strangles, Hide-bound, Broken-wind, Roaring, Staggers, Megrims, Seedy-toe, Sand-crack, Canker, and a host of other names? It is impossible to forget the astonishment manifested by a young cornet, fresh from school, when his groom informed him that there were frogs and thrushes in his horse's feet. It may be considered by amateurs knowing and "horsey" to resort to such words, as they imply an intimate acquaintance with the stableman and groom, and their vocation; but it can scarcely be deemed creditable or becoming for those who are fairly well educated and scientifically trained to follow such a lead. Even some of these vulgar terms were, perhaps centuries ago, derived from foreign languages, either French or Italian; but they have long since become so corrupted or transformed as to have completely lost their identity. It is to be hoped that among the many reforms now being proposed or carried out by the Royal College, this rather important subject may not be altogether lost sight of.

EXCERPTS FROM FOREIGN JOURNALS.

BY J. H. STEEL, M.R.C.V.S., A.V.D.

From M. Bouley's "Chronique," Recueil de Méd. Vét., 1 August, 1881.

M. BOUTET, of Chartres, "Experiments on Charbon Vaccination in the Sheep." Paper read at the meeting of the Academy of Medicine, 26th July, 1881. —A committee for the experimental investigation of Charbon was appointed by the general council of Eure and Loire, "a district which is now classic ground as regards Anthrax." The following programme was fixed:

1. To limit the experiments at present to the ovine species.

2. To, for experimental purposes, procure two flocks of sheep, equal in number—one at the commencement of the experiment to be subjected to the process of vaccination; the other, not.

3. To then inoculate the two flocks, thirty or forty animals in all, by means of a Pravaz syringe, with blood taken from a sheep which has died from Anthrax, in a neighbouring farm within twelve hours before the injection.

The greatest care was practised in the inoculations, which were made on sixteen unvaccinated sheep, and on nineteen vaccinated by M. Pasteur

himself. The macroscopic and microscopic characters of Charbon were indubitably present in the animal from which the blood was procured. The syringe used had a capacity of a cubic centimeter. The fluid was taken from different parts of the body, and twelve drops of it were injected into the sub-cutaneous tissue of the left thigh of each animal, those of the two lots being taken alternately. Two days after, the committee met, and found that whereas not one of the vaccinated sheep had died, nor even showed signs of disorder, ten of the other lot were already dead, and others out of sorts. Although since the injection of the blood all the sheep had been subjected to the same conditions, on autopsy of the ten sheep, all the characteristic lesions of Anthrax were found; at the seat of puncture was an abundant effusion, of an amber colour, showing here and there small clots of blood. While this examination was going on, two more unvaccinated sheep died, with the same lesions. Seventy-one hours after inoculation, three of the remaining unvaccinated sheep died; one only survives to the present time. Of the vaccinated sheep not one exhibited the slightest sign of disorder. These results show that vaccination secures for sheep complete immunity from Anthrax; it remains to be demonstrated how long this protection lasts.

These Chartres experiments supplement those made at Melun, and differ from them:

1. In that at Melun, the four years' old, very virulent material prepared by culture in Pasteur's laboratory, was used for inoculation; whereas, at Chartres the material introduced was blood of an animal which died from Charbon only four hours before.

2. At Melun, one of the vaccinated animals died on the third day; while after inoculation, at Chartres, none were lost.

3. At Melun, all the unvaccinated sheep died; but at Chartres one survived.

At Alfort a hundred vaccinated sheep were inoculated with the deadly virus, and not one died. Already the number of sheep vaccinated by the colleagues of M. Pasteur, and by M. Nocard his pupil, amounts to 20,000, and not even one of them has been affected with Anthrax, though this disease has claimed as victims some of the unvaccinated sheep intermingled with them. M. Pasteur is determined that his process shall have a fair trial, and keeps his secret so that until its value has been proved beyond all doubt the method shall not be abused by careless and ignorant operators. The supply of animals to be operated on this year will probably be in excess of the number so few vaccinators can manage.

M. N. TOUSSAINT: "On a New Process of Vaccination for Fowl Cholera." Read before the Academy of Sciences, 25th July, 1881.—The learned Professor's experiments show that the virus of acute Septicæmia, by passing through the system of the rabbit, undergoes such changes as render it a vaccine fluid for Fowl Cholera. He thinks that the microbium of Septicæmia and that of Fowl Cholera are one and the same—namely, that Fowl Cholera is only Septicæmia. Thus he considers vaccination of a fowl with septicæmic fluid from the rabbit is only vaccination with the Cholera microbium, with its virulency diminished by its passage through the system of the rabbit. M. Pasteur considers Fowl Cholera and Septicæmia two distinct diseases. M. Bouley suggests that, even so, it is possible M. Toussaint may have indicated a new method of securing immunity by vaccination.

M. GALTIER: "Injections of Virus of Rabies into the Circulatory Current do not cause Outbreak of Rabies, and seem to Confer Immunity."—Such is the heading of a paper presented to the Academy of Sciences on 1st August. The author has found that ten sheep have been rendered resistent to inoculation with Rabies by the injection of rabific virus into

their veins, and this caused them no inconvenience, and secured them immunity from inoculation through the skin or areolar tissue. The virus of Rabies acts much like that of Symptomatic Charbon (Blackleg), which, though invariably producing fatal effects when inserted into areolar or muscular tissue, when injected into the blood only gives rise to slight fever, but exempts the animal from future attacks. The virus used by M. Galtier destroyed unvaccinated animals, but not those which had been subjected to his process of "Rabies Vaccination." This experimenter hints that his method, promptly utilised, might prevent development of Rabies after an animal has been bitten by a mad dog.

MM. PASTEUR, CHAMBERLAND, ROUX, and THUILLIER: "Inoculation of Rabies by the Surface of the Brain." Read before the Academy of Sciences, 30th May, 1881.—"Frequently we have successfully inoculated with portions of the medulla oblongata, and even the frontal portion of one of the hemispheres, and the cephalo-rachidian liquid. The resulting Rabies had fixed and definite periods of incubation. The seat of the virus of Rabies is, then, not in the saliva only. The brain contains it, and it is when procured from this source equal in virulence to that in the saliva of mad dogs. One of the greatest difficulties of researches on Rabies consists, firstly, in the uncertainty of development of the disease after inoculations or bites; secondly, in the length of the period of incubation. It is aggravating to have to await for months the outcome of a single experiment, when numbers have to be performed in sequence. It will, therefore, be very interesting to know that we have learned how to shorten the period of incubation and surely communicate the disease." The virus to be used in inoculation is washings of the cerebral substance of a mad dog, introduced in a pure state. The first symptoms appear in a week or a fortnight, and the animal dies from acute Rabies, of the raging or dumb form, in about three weeks. [This last extract may prove interesting, as giving in the observers' own words their estimate of the value of their methods. It enlarges somewhat on the notification of their results given in the October number of the Journal.]

ANTISEPTIC CASTRATION.

BY PROFESSOR BAYER, VIENNA.*

As a warm advocate of the antiseptic treatment of wounds, I have neglected no opportunity of introducing into the surgical clinic of the Vienna Veterinary School the method which, in human medicine, has proved of such endless advantage. As a matter of fact, I was soon fortunate enough to obtain healing by first intention in cases which, under the previous methods of treatment, healing would have required a much longer time.

During the past scholastic year, I extended Lister's method to castration, which up till now, we must confess, has usually been conducted in a manner disproportionate to the resources of science.

The most usual methods obtaining with us are those by means of clams, and removal by torsion. In both cases, however, the chances of healing by first intention are very remote, inasmuch as a large portion of contused tissue remains behind, shed, and acting as a foreign body, leads to suppuration.

Being particularly anxious to obtain healing *per primam intentionem*, the

* Translated from Adams' *Wochenschrift* by W. F. Garside, the Brown Institution, London.

above methods were, of course, denied me, and of those still remaining I had to choose between ligaturing the spermatic cord or the spermatic artery.

Although the former has been recommended by several veterinarians, it has been but little carried out, in consequence of the frequency of deaths from Tetanus. Another of its disadvantages is that the thread or ligature sometimes does not come away till after the skin-wound has healed up, necessitating thereby a fresh operation.

The above-named drawbacks are, in my opinion, best avoided by the application of antiseptic thread, which may remain in the body without harm, particularly if the ligature be only drawn as tight as is necessary to prevent hæmorrhage; for if it be drawn together to such an extent as to stop the circulation in the peripheral end of the ligatured cord, death and removal of the same becomes absolutely essential.

From this time forwards I propose carrying out trials in this direction, and reporting the results as they are obtained. During the past year I have ligatured the vessels direct at the spot where they have been severed.

The scrotum and neighbourhood having been cleansed by soap and three per cent. sol. of carbolic acid, and everything which is to come in contact with the wound dipped in the same solution, I open the scrotum just wide enough to permit the testicle to escape, and next wrap a linen cloth (soaked in carbolic acid solution) around the spermatic cord, in order to prevent blood gaining access to the sac.

To prevent the field of operation becoming covered by the flow of blood when the cord is cut through, as well as to enable me to cut straight, I apply the ordinary steel clams. With the left hand I then seize the spermatic cord, divide it below the clams (in a horse secured on its back), and ligature the spurting vessels with carbolised silk. The number of ligatures necessary varies with the number of arterial convolutions cut through. These are seen distended at the end of the cord, and it easily happens that several portions may be cut through. The end of the cut artery is, however, not always easy to find. If a vascular loop happens at the time when it is severed to be straightened out by the tension exercised on the spermatic cord, it immediately curls itself up, and the end lies elsewhere, and need not then necessarily spurt. With one horse absolutely no bleeding occurred, notwithstanding the fact that the lumen of the vessel was visible and the cord lay free.

It may perhaps be suggested that it would be better, instead of applying such numerous ligatures, to use only one, namely, around the straight portion of the spermatic artery itself.

I have myself tried this plan, but after cutting away the testicle was obliged to bind up several spurting vascular ends. This is explained by the fact that the artery divides, and it is easily possible for only one branch to have been included in the loop of the ligature. Moreover, it is much quicker to tie several ends, than to search for and isolate the artery alone, especially if the horse struggles somewhat.

After the other testicle has been removed in a similar manner, I cast another look to see whether by chance some bleeding vessel may not have been overlooked. The cord and scrotum are then carefully but thoroughly cleansed of blood, and the lips of the wounds brought together by catgut.

In some cases when the horse has risen a small quantity of blood, which had probably been situated at the bottom of the scrotum towards the inguinal canal, is observed. This may be squeezed out, and a suspensorium covered with carbolised cotton or tow applied.

The horse remains standing the first day, and the bandage (suspensorium), if necessary, renewed after the wound has been gently sponged with carbolic acid solution.

On the next day, as a rule, swelling of the scrotum and sheath takes place even in those cases where healing *per primam intent.* has occurred. The horse is, however, kept quiet, as I believe that by exercise the wound surface is irritated, and healing by first intention hindered.

I have up till now castrated, in this manner, *fifteen horses, of which healing per primam intentionem has occurred four times on both sides, and twice on only one.*

With the remainder the wound opened but I obtained, notwithstanding, more favourable results than by the earlier applied methods. The healing went on much quicker, so that the part operated upon was as far forward in healing the fourteenth day as it usually is at about the end of a month.

Of course, when suppuration has set in, the possibility of infection taking place is present, just as it is when the other methods are carried out, and as a fact I have lost one horse from this cause.

The greatest variety exists in the pulse, temperature, respiration, etc., of the animals after the operation ; so that nothing positive could be gathered therefrom. Thus, in one case in which there was healing by primary intention, the temperature rose from 37·7° Cent. before the operation, to 40·2° on the fourth day, and then fell again, whilst the pulse varied the whole time between 44 and 48, and the breathing between 14 and 28.

In a case of healing by second intention, the temperature rose from 38·2° to only 38·9°, and the pulse remained between 36 and 40, and the respirations 12 and 16.

A thoroughbred stallion showed a similar agreement in the three curves. The temperature rose from 37·8° successively to 39·2° on the fourth day, the pulse 36-60, and the respirations 12-28—appearances certainly not calculated to give much hope, and yet healing *per primam intentionem* occurred.

My method of castration is not novel ; I apply to the old methods the discoveries of modern science, and achieve thereby certain results which previously had not, I believe, been obtained. For this reason it is, therefore, that I would recommend to my colleagues castration under antiseptic treatment.

It may be urged that it can only be carried out with assistance ; but an assistant is also required when the older methods are practised, as for closing and fastening the clams. All then that is necessary would be to instruct the same person to bind up the artery when secured with the forceps by the operator.

I must certainly confess that a longer time is required than when castrating by clams ; but in this case it must be borne in mind that a second visit is necessary in order to remove them, and the time occupied thereby certainly equalises matters.

[During a three months' sojourn in the beautiful city on the Danube, we had the opportunity of witnessing, by the kindness of Prof. Bayer, many of the above operations. As the time occupied was only a quarter to half an hour, it cannot seriously be urged as an objection. Besides the many good points gained, of which Prof. Bayer has spoken, it certainly is a much more scientific mode of procedure, and tends to make a better impression on the public mind than when the animal is emasculated by the crude and somewhat barbarous method of using clams. Anything which minimises the bad results, or reduces the mortality arising from this essential operation, is to be recommended. The antiseptic method is decidedly one of them.—*Translator.*]

ENORMOUS URETHRAL CALCULUS IN A COLT.

In the *Annales de Méd. Vétérinaire* of Brussels, for December, 1881, Veterinary Surgeon Vandermies, of Hal, describes an interesting case of urethral calculus in a colt, which was cured by perineal urethrotomy and retropulsion of the stone. The colt—a two-year old entire, of the heavy draught breed—was first seen by Vandermies in November, 1880. It was then in good condition, but there was incontinence of urine, which was clear and limpid, normal in appearance, and escaped in drops from the prepuce, particularly during movement. From time to time efforts at micturition were made, which were often in vain; but now and again a strong jet of urine was expelled. There was an ulcerous sore at the free margin of the prepuce, due to the almost continual contact of the urine with the skin; the penis was seldom extruded. Vandermies diagnosed the case as one of paralysis of the neck of the bladder, and treated it accordingly. Towards the beginning of 1881 the same symptoms were observed, though modified. The urine was troubled and sedimentary; the preputial ulcer had enlarged; the penis was atrophied, and never seen. It was concluded that there was either sediment, gravel, or a calculus in the bladder. Later the sore healed on the application of lard, and the colt remained in a satisfactory condition. On March 28th, Vandermies was hurriedly sent for to see the animal, which was making violent efforts to micturate, but with no avail, and lying down and getting up continually, as if suffering from severe colic. After lying for a short time, it would rise on its fore limbs and sit like a dog; when it got up it pushed its hind quarters against the wall, as if it received relief by this procedure. Vandermies had always noticed that these attitudes or abnormal positions indicated an obstacle or alteration, either in the posterior portion of the intestinal canal, or in the bladder or uretha. He, therefore, in this instance, explored these different parts *per rectum*, when he felt on the floor of the pelvis, in the urethral canal, and near the posterior border of the ischium, a hard tumour, which could scarcely be displaced. It was therefore evident that a large calculus was lodged in the urethral sinus, and it had in all probability been shifted there from the bladder, where it was originally formed. The condition being known, the remedy was no longer doubtful. Vandermies had no instruments with him save the one without which a veterinary surgeon is rarely destitute—a bistoury; and the case being urgent, he hastened to relieve the patient, though hesitating whether to open the urethral canal by the rectum, or externally in the perineal region. The latter was decided on, and introducing the left hand into the rectum, the calculus was drawn steadily and strongly backwards, so as to make it project beneath the skin, a little below the anus. An incision was then made directly on the middle of the tumour thus formed, and as if by enchantment there escaped a calculus, rough on the surface, and having the form and volume of a hen's egg. It measured rather more than three and a half inches long (nine centimètres), and two inches in diameter, while its weight was slightly more than six and a half ounces (180 grammes).

The wound resulting from the operation was very small, in consequence of the retraction of the tissues. It healed rapidly, and the colt was saved.

Such a case is rare in practice, and demonstrates once more that wounds penetrating the urethral canal are not always so serious as we might be led to expect.

CHARBON, OR ANTHRAX.*

BY T. C. TOOP, M.R.C.V.S., KNARESBOROUGH.

BEING asked, a few days ago, by our Secretary, to extricate him from a difficulty which had arisen from the indisposition of Mr. Nettleton, I consented to do my best, by making use of some notes in my possession relating to Anthrax, thus bringing to your notice a *résumé* of facts bearing on the pathology of an important group of diseases. Time and space only permit me to deal particularly with Charbon in one form, viz., Splenic Fever, or Anthrax proper.

In one or other of its varied forms this disease affects the whole mammalian family, with but few exceptions, and even birds and fish. True, some classes are less susceptible than others: those under domestication and those existing in the most savage conditions alike suffer from it.

Geographical situation proves no constant source of exemption: it destroys the reindeer of the polar regions as it does the inhabitants of the temperate and torrid regions. It is found enzootic in the marshy districts and lowlands of Spain, Hungary, Germany, and Poland; in Siberia it rages as an epizootic, or even panzootic disease, to such an extent that the aid of the military authorities is required to quell the terrible "Jaswa" by burning the carcases of the infected.

Its antiquity is as great as its destructiveness and prevalence. Doubtless it was the blain from which the Egyptians fell the victims for their detention of the Israelites. Virgil and other early writers faithfully describe it. In our own country it prevailed extensively in the early and middle ages, as Anglo-Saxon MSS. still extant bear testimony, by containing nostrums, leechdoms, charms, etc., for its prevention and cure. The past century was signalized by its general prevalence during the last half of it. Still later, it extensively prevailed in the years 1846, 1872, and 1877. Possibly its abstinence is to be accounted for by the better management of animals since the importance of veterinary sanitary science became generally acknowledged.

Individually, some animals of a particular class have a remarkable susceptibility to take this disease. Those apparently the most unlikely, the most vigorous, take the disease the earliest, and to them it is most fatal.

In this country the cow and the sheep are most frequently affected. In torrid regions the order is reversed, the horse showing the greater predisposition.

Climate and season do not exert such marked influence as might be expected. Although, perhaps, the most frequent in hot, damp weather, it may occur under directly opposite conditions. It may rage as an enzootic, epizootic, but rarely sporadic disease, generally highly contagious, but not constantly so.

Charbon means black, presumably in allusion to the colour of the blood; Anthrax, a boil or pustule, applicable inasmuch as inoculation gives rise to the formation of a boil or pustule in some animals, and the human subject in particular, many human lives having been sacrificed through ignorance of this fact.

Its principal characteristics are rapid local and general death; blood extravasation in the submucous, subserous, and subcutaneous layers; Necrœmia, or death of the blood accompanied with its rapid putrefaction and elimination of gaseous compounds, which permeate the loose cellular tissue and form emphysematous swellings.

Primarily, Anthrax consists of an alteration in the organic constituents of

* Read before the Yorkshire Veterinary Medical Society, on October 27th.

the blood: on the extent of this alteration depends the virulency of the malady. This change is specific, inasmuch as it is always associated with the presence of special organisms in the blood, now known as Bacteria, this variety being termed Bacillus Anthracis.

These minute organisms were first discovered by Pollender, in the year 1855, since which time their importance has advanced rapidly. At first regarded as diagnostics, thought to be transformed blood corpuscles, crystals, granules, etc., they have become a focus for thought which has almost revolutionized the science of pathology. They are described as fine, apparently solid, straight, unbranched objects, varying from $\frac{1}{1000}''$ to $\frac{3}{1000}''$ in length, and $\frac{1}{3000}''$ broad. Ordinarily they are motionless, but under suitable conditions they are mobile. As they exist in the blood they have no appearance of structure. In water, under the $\frac{1}{8}''$ objective, they are seen to be made up of a number of spheroids, each of which is composed of an outer transparent envelope, enclosing a darkened central position. By fixion each of these spheres is capable of developing into a mature Bacillus. Accompanying these rods are roundish bodies, termed "Micrococci." Their relationship to Bacteria is not well ascertained. Some contend that they become Bacilli by growth.

Shortly after death of the host the Bacilli disintegrate, and are replaced by the actively moving Bacteria of putrefaction. These have no relationship to their pathogenic predecessors.

The nature of the change in the blood affected by their presence is a matter of debate. Some still hold, with Virchow, that they give rise to the formation in the blood of a material he termed Sepsin, to which he ascribed the disease.

Pasteur has proved, beyond a doubt, that this is incorrect, and that the disease is produced by the Bacteria themselves, and not by any virus—

Firstly, by demonstrating that fresh Anthrax blood, preserved from the air and putrefaction by sealing in glass tubes, loses its contagious properties in seven or eight days, a new virus being thus preserved.

Secondly, fresh defibrinated blood, filtered through eight layers of blotting-paper, is completely freed from contagion by complete separation of the Bacteria as a residue, the filtrate being harmless.

Thirdly, the period of incubation may be prolonged at will, by regulating the number of Bacteria present in the inoculating fluid. In the case of a true virus, such as that of Small-pox, the quantity of virus would not affect the incubative period.

Fourthly, frequently a living fœtus exists in an animal that has died of Anthrax. The membranous walls of the capillary vessels of the chorion and uterus effectually act as the filter did. Provided the fœtus be dead, you cannot produce Anthrax in another animal by inoculating it with its blood: other causes are in action to produce death—oxygen starvation, etc. Cultivating Bacteria extrinsic to the animal body does not alter the pathological indications of the parasite.

A brief history of the Bacillus during artificial cultivation will be interesting to the comparative pathologist, having, as it has, an important bearing when prevention is considered.

If kept at a constant temperature (32° C.), the rod-shaped Bacteria lengthens out into a long thread-like filament, in which after a little time bright roundish bodies or spores are noticeable. They are set free on disintegration of the filament, becoming free in the cultivating fluid. These develop into Bacteria by endogenous growth, rapidly increasing in number by simple fixion. At first quite motionless, they become active if kept under observation in a drop of aqueous humour, and, placed on a warm stage, they soon show symptoms of further segmentation after settling down, as though tired of exertion. A mouse, inoculated with the cultivation liquid whilst mobile,

died of Anthrax poisoning, showing their identity to Bacillus Anthracis. The mobile phase exists for several hours, the rod-shaped Bacteria cultivated eventually, elongating into filament, becoming as much as eighty or one hundred times its original length in five hours. Development by spore formation can only be accomplished in given temperatures (28° to 32° C.). After the spores are formed other changes take place at ordinary temperature.

The change from the spore to the rod is thus accomplished: escaping usually on the third day of cultivation, the spore first divides into four sporules, each of which becomes elongated into a rod by internal growth at their poles, the capsule becoming transparent and indistinct from the contents.

During the life of the host this method of reproduction does not occur, simple multiplication by transverse fixion taking its place; but immediately after death, when external surroundings are favourable, spore production is established, and continues until putrefaction or want of oxygen checks it. Once spores are formed in the blood, they may be dried, and will retain their virulency for years unchanged. Spore formation is completely arrested by the slightest trace of carbolic acid; once found, however, they withstand the action of compressed oxygen or a high or low temperature.

There are several theories respecting the mode of action of the Bacteria:—

1st. Some consider that they rob the red corpuscles of their oxygen, and contaminate the blood with carbonic acid, hence produce the symptoms and pathological indications of asphyxia.

2nd. Others consider that they induce symptoms and death by occluding the capillary vessels of important organs, such as the brain, lungs, etc., giving rise to coma and asphyxia, and general indications of oxygen starvation and carbonic poisoning.

3rd. That they induce the formation of a material, or secrete it, which produces asphyxia and death by paralysing the respiratory centre in the medulla.

This latter theory is not supported by any substantial evidence, but really negatived by the simple fact that separation of any substance capable of producing any such pathological indication, apart from the Bacteria themselves, is impossible. The two former theories are easily demonstrated by the aid of the microscope and chemical research, and are of themselves sufficient to account for both the symptoms and pathological indications.

On examination, the capillaries of the lungs are seen to be perfectly occluded by these organisms to such an extent as to beautifully infect them, thus entirely arresting the blood-flow from the right side of the heart; hence the venous congestion and comparatively bloodless condition of the left heart and arteries, so characteristic of Anthrax. Vascular emboli, then, are the immediate cause of death, producing asphyxia mechanically. The comatose condition of the animal prior to death is caused by similar plugging of the capillary arterioles before they break up to form the very minute capillaries ramifying in the brain substance, thus producing congestion, accompanied by anæmia.

Toussaint has discovered another form of organism producing an extremely virulent variety of Anthrax. This parasite was found in the blood of an animal showing every indication of Anthrax, but showing no trace of ordinary bacteria. He inoculated many animals with this blood, with the same result—yielding well-marked lesions of Anthrax, especially affecting the intestinal canal, but no visible Bacteria. Under a higher power he saw myriads of very small oval or nearly round refrangent points, which were capable of cultivation, the reproduction of this microbium being so rapid that one organism became twenty-two in two and a half hours. They rapidly produced death, whether given "per orem" or injected: they pro-

duced disease by simple cohabitation of animals for a short time. Ordinary Bacteria may coexist with them, but these latter caused death.

The causes which influence the production of disease are far from being well understood. Whatever they are, they produce a susceptibility or dyscrasia in the animal system, rendering it unable to resist the attack of disease germs. That such a condition of system is necessary is proved by experiments, showing that rats fed on meat exclusively could not be made the subject of disease by inoculation, whilst those fed on bread readily became affected. Until recently pathologists believed that under certain conditions of external surroundings the disease became spontaneously developed. These causes were regarded as follows :—

1. Influence of temperature.
2. Water spread over the surface of the soil, stagnant pools, ditches, morasses.
3. Food tainted with decomposing organic matter.

These and other causes acting in conjunction were believed to be all-powerful in developing a miasm, thought to be of cryptogamic nature, which, on finding its way into an animal's system, already predisposed, generated disease "de novo" by becoming transformed into Bacteria. This theory is known as the miasmatic theory of origin. It has received support from the fact that the disease is most plentiful in rich, low-lying lands, which in consequence abound in natural herbage, whose foliage is constantly undergoing the process of decay, and that it occurs more frequently in summer than in winter, decay being favoured by heat and moisture.

I cannot convince myself that this is the true explanation, being unable to accept the theory of spontaneous generation, or "de novo" origin of any disease, depending on the action of any substance, whether Bacterial or a virus, any more than I can believe that a mite or other insect can be generated in any other method than from parent mites or insects.

Denying the "de novo" origin of disease theory, how, then, are we to account for the sudden appearance of disease in a district where it has been absent for a considerable time? With our present knowledge, this is certainly a matter of difficulty ; but the investigations of M. Pasteur go a long way toward its solution. He has distinctly shown that the spores of the Bacteria can exist inert for an unlimited length of time external to the animal body, but also that they are not only preserved intact, but actively undergo developmental changes when mixed with earth. Ten months after the burial of an Anthrax-stricken sheep he found the surface soil in the neighbourhood of the grave teeming with Bacterial spores, which produced Charbon by inoculation, these being possibly brought to the surface by worms. If capable of preservation for ten months, why not as many years? In this direction we must refer to the source of origin, and not to the effects of causes which, in my opinion, are simply predisposing.

The propagation of Anthrax is by contagion, the contagium being essentially "fixed," rarely indeed "volatile," its mode of access by inoculation either through the medium of an abraded mucous or cutaneous surface. Here the spores are developed into Bacteria, which multiply by further spore development. Increasing in number as the time of inoculation grows distant, they establish a local inflammatory process, causing a plasma to be thrown, which acts as a vehicle for entering the lymphatic system, wherein they rapidly multiply, quickly gaining exit from the gland into the blood-stream through the efferent vessels.

Flies are active agents in disseminating disease, by carrying contagium from diseased carcases to healthy animals at a distance. Water, again, is a fruitful source. In one particular outbreak I believe the cattle were affected solely from this source, and that the disease in this instance was primarily

induced in the fish, and secondarily in the cattle. Hundreds of fish were to be seen dead on the banks of the river in the highest state of putrefaction.

To sum up, then, I conclude that the chief etiological *rôle* is attributable to impregnation of the soil with matter bearing Bacteria or their spores, a buried carcase being rightly regarded as more dangerous than marsh malaria. Artificial manures, I believe, are frequently contaminated with spores, and not uncommonly the cause of an outbreak, attributed to other influences.

It would be quite impossible, within the limits of an essay, to describe the symptoms exhibited by Anthrax in its varied forms. They vary as the disease assumes a localized or non-localized form, or is rapid or slow in its course. In the latter cases, symptoms due to the altered condition of the blood are complicated, as the disease advances, by others due to perverted local nutrition. Many of the general symptoms present in Splenic Fever are characteristic of the other forms. The disease is capable of assuming three well-marked degrees of intensity, the first subjects of disease in an outbreak being either found dead, although apparently in perfect health a short time previously, or they are seen to become suddenly seized, as suddenly fall, and die in convulsions. This, the acute apoplectic type, showing no premonitory symptoms, usually ushers in an outbreak by destroying several of the best members of the herd. Then follows a form less intense, premonitory symptoms being noticed. These are refusal of food, suspension of rumination; unusual prostration, accompanied with stupor; the back arched, the skin harsh and dry, the hair erect; pain is frequently evinced on pressing the back; diarrhœa, of a fetid character, accompanied by evidences of abdominal pain; stamping with the feet, looking round at the flanks, etc., shows itself; temperature increased to 105° or more; hurried respiration, accompanied with a short husky cough; muzzle dry and mouth cold, the buccal membrane being of a dark red colour; considerable flow of saliva, frequently tinged with blood; the conjunctiva violet red in colour, occasionally lachrymation. As death approaches the internal temperature subsides, becoming as low as 94° F. in some cases; the respiration becomes panting and shallow, indicating approaching asphyxia; the poor brute staggers, falls, and dies in convulsive agony. Tympanitis may exist before death, but afterwards it rapidly ensues, the abdomen being filled to bursting; this form usually terminating fatally in from twelve to twenty-four hours.

A third form may prevail extensively as an epizootic amongst the remaining animals. After the above have decimated their numbers, similar symptoms to the above are exhibited, but less intense, the temperature rarely exceeding 104° F.; the pulse is small, indistinct, and frequently intermittent, the visible mucous membranes slightly congested and tinged a yellow hue; constipation is commonly present.

I have been fortunate enough to see a good many cases of Splenic Fever, affecting the cow and the sheep; but only once did I see it affecting the horse. This was a mild form of the disease. The premonitory symptoms in this case were Spasmodic Colic, frequent but not acute; then the gait became unsteady, the animal much excited, becoming calm and even stupid between the paroxysms of pain. Hot and cold sweats bedewed the body alternately; breathing hurried and irregular, pulse small and indistinct, the heart's sounds being audible at a considerable distance, death suddenly closing the scene. This case occurred on a farm where the disease was raging amongst the cattle. In tropical countries the horse is frequently the subject of Anthrax in the form of Cape Horse Sickness, Loodiana Fever.

The blood rapidly undergoes a marked and characteristic change, becom-

ing black and non-coagulable, appearing like Stockholm tar, its serum being stained a chocolate colour from solution of its colouring matter, escaped from the disintegrated red discs. All tissues coming directly in contact with this fluid become similarly stained, particularly the tunica interna of the larger vessels and the endocardium. The red cells are broken up, the leucocytes studded with minute eminences believed to be adhering immature Bacteria.

Emphysematous swellings occur in different parts of the body. The abdomen becomes tympanitic sufficiently to cause prolapse of the anus or a copious flow of blood there from being commonly noticed. Frequently there is discolouration of the skin, the hair being easily removed in extensive patches. Rigor mortis is scarcely noticeable. The tissues are infiltrated by a yellow serosity, the muscles purple in colour and pultaceous. If tumours are seen they are found to be composed of a gelatinous, citron-coloured material invading the intercellular spaces, surrounded by emphysema, no two characteristics of inflammation being found. The right side of the heart is usually engorged with semi-black-fluid blood, the left side being like the arterial system, generally empty ; the endocardium and pericardium being covered by ecchymosed spots or petechia, the sac containing an excess of coloured fluid, the heart being soft and flabby. The peritoneum and pleura are similarly studded with ecchymosis, their cavities containing similar coloured fluids in excess. Tumours may form between the folds of the mesentery. The lungs are voluminous, congested, and crepitating, their capillaries crammed with Bacteria. The intestines are congested, the lining membrane easily removable, and contents mixed with extravasated blood. The spleen is immensely enlarged. This is the most characteristic and constant indication of the disease. I have seen it weighing as much as thirty pounds. In one case rupture of its capsule occurred. When washed, its fibres are seen to be torn asunder, and all appearance of structure lost, it being converted into a putrid mass. Liver enlarged and pliable and dark coloured. The kidneys present a similar appearance. The meningeal membranes are congested and studded with ecchymoses. The cerebral capillaries, being plugged up, render the brain itself anæmic. These lesions are all due to primary alteration in the blood: it becomes highly osmotic from conversion of its albumen and dextrine, and hence the infiltration.

Our first measures must be to remove healthy animals from the pastures where they graze. Emigration to a distant field, or, still better, out of the district, and entire change of diet, must be insisted on. All dead animals and their *débris* should be at once cremated, or buried very deeply and covered with quicklime in arable land. Diseased animals must be isolated, and suspected ones subjected to a course of antiseptic medicine. Stalls and stables must be thoroughly disinfected, the walls and wood-work lime-washed and thoroughly ventilated before again used. Particular care must be exercised to guard against accidental inoculation. During *post-mortem* examination, the hands should be smeared with tallow or grease of any description.

Anthrax flesh must on no consideration be used as food. Sixty thousand people are said to have died from this cause in the neighbourhood of Naples in 1656. There is no difficulty in detecting it, the colour of the tunica intima being characteristic, the presence of Bacteria diagnostic. Milk must also be stringently avoided: it teems with Bacteria and their spores, and will readily produce disease by inoculation and feeding.

In many cases there is no time for any treatment. Death being very sudden, it must at all times be both prompt and energetic. Some advocate bleeding, others depletion by powerful saline purgatives, quickly followed by the use of antiseptic agents—ʒ to ʒiij doses of carbolic acid in starch emulsion frequently repeated. I have seen this treatment act very effectually

when the disease has been subacute, combined with the inhalation of sulphurous anhydride or chlorine gas. Excellent effects have been obtained by Continental veterinary surgeons from the use of carbolate of ammonia given per orem and also hypodermically 5i doses if given by the mouth, or the following formula for hypodermic use :—℞ Ammon. Carb. 5ij ; Glycermam, 5iv ; Aqua, 5xiss ; 5i to 5iij to be injected every four hours, its action being more rapid and certain if thus administered. Mr. Jolly highly favours the intravenous injection of iodine, using from 5ij to 5iijss as an injection in a warm solution, both as a curative and preventive means. His results are certainly surprising. (See *Veterinarian*, July, 1880, p. 457.) As preventive medicaments, hyposulphite of soda and carbolic acid are principally used in this country. Salicylic acid has also lately been recommended. Its worst fault is its insolubility. A 5 % solution of borax (boiling) will dissolve about 7 % acid.

It only remains for me now to thank you for your kind attention. I feel that I have tried your patience sorely by dealing too long on some parts of my subject which seem of least practical value. I know full well that it is anything but complete, and that it does not represent one-half of the accurate knowledge brought to light by comparative pathologists in all parts of the world. If I have failed to make the subject interesting, the fault is with me, and not it. I now submit it to your impartial criticism.

THE IRISH CENTRAL VETERINARY MEDICAL SOCIETY.

It gives us much pleasure and satisfaction to learn that a movement is on foot to establish a society in the Irish capital with the above designation, and that it has every prospect of a brilliant commencement, the co-operation of such well-known and distinguished members of the profession as Messrs. Gloag, Sperring, Lambert, Simcocks, Ross, Hunter, and many others, having been secured. A preliminary meeting is to be held on the 9th instant, at the Hibernian Hotel, Dawson Street, Dublin, and there can be no doubt that a solid foundation will be laid for future substantial success. The necessity for such a society has long been evident ; indeed, its non-existence on at least one recent occasion has been little less than a calamity, though happily the profession in the sister island has been well represented and supported by the enthusiasm and ability of Mr. Simcocks, of Drogheda, to whom we owe our best thanks for invaluable assistance in the matter of the proposed Licensing Veterinary School in Dublin, but more so for the great service rendered during the passage of the Veterinary Surgeons' Bill through Parliament. With such gentlemen on its list, the success of any scheme or society is assured ; and considering that there is at present only one Veterinary Association in Ireland, while some of the best practitioners in the United Kingdom are resident there, the Irish Central should be one of the best of the many now doing good service throughout the length and breadth of the land. It is a duty every one owes to his calling to belong to and support such a society, and we shall expect to see a long list enrolled in the register of this new addition to our scientific and politico-professional power.

PROFESSOR YOUNG'S ADDRESS.

In the address which Professor Young delivered at the opening of the Glasgow Veterinary College, reference was made to the danger attending the existence of Tuberculosis in cattle. With regard to this subject, the

Professor sends the following note :—"Since the address was delivered, I have learned, through the courtesy of Mr. Fleming, that I have done injustice to the English students of Tuberculosis. I have not altered my statements, but hope to return to this question shortly and atone for my defective information."

THE HIGHLAND AND AGRICULTURAL SOCIETY AND THE VETERINARY SURGEONS ACT.

A CORRESPONDENT forwards a somewhat lengthy communication for which we have not space at present, but of which we now publish an abstract that will be sufficient to explain his object, and, it is to be hoped, obviate the necessity for giving his letter in detail. He refers to a statement made occasionally, to the effect that it would not have been possible to obtain the Veterinary Surgeons Act had the Highland Society opposed it, and that this opposition was removed by the agreement to admit its certificate-holders to membership of the Royal College without examination, and pretty much on their own terms. He points out that this is a false statement; that the certificate system had for a long time been played out, and that it was more of a farce than anything else; as the certificate was not recognised in public as a proof of legal qualification, and the holders of it would not in recent times be admitted to the army, unless they also had the diploma of the Royal College. He states that the agreement was entirely for the benefit of the Society, as its examinations could not have been continued much longer, and that this confession had been made by the Society itself. That the agreement did not remove the opposition of the Society to the Act of Parliament for the benefit of the profession, the writer demonstrates by the fact that it did oppose the Bill, notwithstanding the concessions made to it by the Royal College, and the extremely favourable terms on which its certificate-holders were admitted, and that at no time could it have offered stronger opposition. That at any time during the last thirty years the Royal College had as good a chance of getting a protective Act, so far as the Society is concerned, as all it could have done was simply what it at last did. That in no sense or way whatever is the profession indebted to the Society for abstinence from opposition to the Act; and that those who assert that, but for the withdrawal of the antagonism of the Society, the Bill would not have become law, pronounce the strongest condemnation against the Society, as it leads to the inference that it was the sole cause of the profession remaining without legislative protection for nearly forty years. At no time, the writer concludes, could the Society have sought for or obtained more for its certificate-holders than it did when the Veterinary Surgeons Bill was before Parliament; and therefore, in the passing of the Bill, neither the Society nor the agreement or charter had anything whatever to do. It was a public, no less than a professional necessity, and the time had come when it must be obtained, in spite of the Society and all other opponents.

From the writer's opinion we do not dissent; on the contrary, we have already given expression to similar views. We are only sorry that those who are certificate-holders and nothing else occupy the anomalous, if not painful, position they now do in the presence of the Act.

Proceedings of Veterinary Medical Societies, &c.

SCOTTISH CENTRAL VETERINARY ASSOCIATION.

THE first quarterly meeting of this Society was held on 8th November in the Crown Hotel, Dundee. The following Members were present :—Andw. Spruell, F.R.C.V.S., Dundee, President ; Messrs. Ritchie, Forfar ; Bissett, Brechin ; Sandeman, junr., Kirriemuir ; Knight, junr., Dunfermline ; Lowe, Perth ; Jack, Dundee ; Hunter, Dundee ; Black, Lochee ; Hampton, Arbroath ; Constable, Inchture ; Pilp, Treasurer, St. Andrews ; and Clark, Secretary, Coupar Angus. Telegrams and letters of apology were received from the following gentlemen, viz., Messrs. Johnston, Perth ; Jas. Henderson, Glasgow ; Dow, Birnam ; Hepburn, Milnathort ; and Thomson, Lochee.

The minutes of the previous meeting being held as read, and other business transacted, Mr. Ritchie, Vice-President, having taken the Chair, the President proceeded to give an inaugural address as follows :—

Mr. Chairman and Gentlemen :—It is not without curious and somewhat complicated sensations that I find myself in the position I now occupy. My first, and perhaps most prominent, feeling being that of pride and exultation that I should have been deemed worthy and called upon to fulfil the honourable as well as responsible duties of President and godfather to our embryo association, just emerging into existence and usefulness ; and of diffidence and misgiving lest through any fault or shortcoming on my part —either of will or of ability—I should become the unfortunate means of marring the usefulness, clouding the prosperity, or indeed perhaps even endangering the vitality, of our infant Association.

I have all the more misgivings as to my position, now that I am assured that there are amongst our number more than one who could, from age and ability, position and opportunities, have filled the presidential chair with equal acceptance, and who could have brought a much greater degree of experience in the conduct of such matters to bear on the Association, and whose riper judgment in matters of professional interest might have been more authoritative on any question in dispute which may be brought before and agitate the proceedings of our meetings. In accepting my position, I have, therefore, to ask the sympathy and forbearance of such men, together with their advice, assistance, and support should the occasion arise for the exercise of such qualities, and with such advice, assistance, forbearance, and concurrence, I trust to carry our first year's proceedings to a successful issue ; and hope that when the time comes for me to lay down my honours, that I shall be able to give a good account of my stewardship, and hand over to my successor in office a society the success and vitality of which has become assured, and as the French would say, "un fait accompli."

Whilst, therefore, I am troubled by the fear that as President of our Association, I may not be able to come up to the standard of excellence so necessary in one who would essay to fill such a responsible position, and whilst I cannot congratulate the Society on the choice of its first officer, I can at least assure you all that nothing will be wanting so far as in me lies to render myself as acceptable and as useful to the Association as my ability and opportunities will admit of.

Passing now, however, from the review of my own personal feelings, which may not perhaps be very interesting to many of you, I will proceed to address a few words to you on the subject of the many advantages that are, or ought to be, derivable from this and such-like associations ; more especially is this so to the younger members of the profession. Though old and young must share in the mutual advantage, the young will refresh the

memory of the old on such subjects as anatomy, physiology, chemistry, and the like; while the older members, who have had some experience of the world and of professional duties, will be able to give many practical and valuable hints to the younger members, who, I trust, will not be slow to avail themselves of such information as can probably only in this way be attained. As one diamond polishes, refines, and improves another, so may we be expected, as we come more and more into contact with and understand each other, to improve, elevate, and refine each other, as well as advance our mutual professional knowledge.

One thing may strike one man, another phase or view of the same case may strike another; reasons will be given in both cases, and the whole weighed, so that by degrees more light will be imported into and brought to bear on our subject, till the result is an advancement of our mutual knowledge, and general improvement. Great ends often arise from very little beginnings, as we all know, and as was well exemplified in the case of that lad who sat by the fireside watching the steam of his mother's kettle, little thinking at the time how great a revolution his then occupation was to lead to, or how his name was, through that very circumstance, to become inseparably associated with the steam-engine, and be handed down to posterity as one of the proudest of England's sons, and one of the greatest of her pioneers of industry. Who can say but that some degree of celebrity may one day be gratefully accorded to one or other of ours, if we faithfully do our duty, and pursue our studies with that assiduity which deserves, if it does no always assure us of, success. It does not always follow that the brain that evolves a new theory or problem is able to carry it on to a successful issue; and in the discussion of any subject, a hint may be dropped by one and taken up and worked out by another, so that in the end it becomes an accepted theory, or even a fully-recognised and demonstrated fact. Such are the means that such an association as this places within the reach of each and all of us, and though we cannot all hope to render ourselves and our names after us illustrious or even immortal, yet we may by patient labour and perseverance contribute our quota to the general information and advancement of our common profession. Besides all this, there are many other fields of usefulness in which the Association does good work. Our periodical meetings cannot fail, I opine, to remove many little petty jealousies that arise between ourselves, and enable us to understand and appreciate each other much better than at present, and this of itself will in the end tend to the advancement of the profession at large; for what is more detrimental to any body of men associated for whatever purpose, than to be divided by internal dissensions and the want of a due appreciation of each other? depend upon it, this to a large extent forms the public estimate of our value and general character. If we do not think and speak well of ourselves, how are we to expect the public to appreciate or think well of us; and how can we expect them to accord us that improved status which it ought to be the earnest endeavour of every one of us to deserve and to obtain?

Our professional motto is *Vis Unita Fortior*, or Unity is Strength; than this, what can be more true, what more strikingly forcible, what more appropriate? or than this, what is there that I can with the utmost propriety on an occasion such as this give greater prominence to, and impress more urgently on your observation? And yet I am sorry to have to say it, what is there that is so much neglected by us; how often, how very often indeed, are we torn asunder by petty interests and jealousies that ought not for one moment to find a corner in our hearts? Let us, then, be resolved for the future to cast all such bickerings and heartburnings aside, and live a life worthy of the liberal profession of which we are members; and let us also

do deeds that shall be not only for our individual advantage, but that shall be for the benefit and advancement of the entire profession of which we constitute a part. In the words of the poet,

> "Let us then be up and doing,
> With a heart for any fate;
> Still achieving, still pursuing,
> Learn to labour and to wait."

In addition to the individual and social advantages that may be expected to arise from such a course of procedure as I have advocated, and also directly attributable to the influence of such associations as this, we may derive benefits of a very different and more of what may be called a political kind; unity in this direction, more especially, being always a most potent factor towards the attainment of our object. What would be utterly unattainable to each of us in our individual capacity, when we associate together and add our votes one to another, becomes a matter of very little trouble: thus we can carry men and measures, and reflect our opinions in this way at the head-quarters of the profession, and make our views felt and respected in the management of the affairs of the body corporate. We may not in our own little Society be able to do a great deal in this way, but by union with other and like associations, the thing is easily accomplished; and if done, then what more honourable or more pleasant duty could devolve upon any enthusiastic member of the profession, than that he should be elected to represent his brethren at the Council Chambers, and perhaps one day fill that highest of all our professional offices—become the President of the Royal College of Veterinary Surgeons?

Such, gentlemen, are a few of the benefits that have occurred to me on a cursory examination of the field of operations of such an Association as the present; its duties are, in the first place, individual, that is, we are taught to think, speak, and act, in fact, to be charitable to one another; then in the joint or collective sense, we are to contribute to each other's information and advancement, both in a scientific, professional, and in a social and political point of view; and, lastly, by means of such an organisation we are enabled to contribute our quota to the general welfare and advancement of the profession as a whole. Let us, then, homologate the sentiment pourtrayed by Burns in his immortal lyric to honest poverty and manhood:—

> "Then let us pray that come it may—
> As come it will, for a' that—
> That man to man, the warld o'er,
> Shall brothers be, for a' that!"

Sentiments such as these, gentlemen, have the ring of the genuine metal about them. Not only does their expression do honour to the humble bard who first enunciated them, but they invigorate and ennoble every man who makes the effort to put them into practice in his everyday life.

Whoever endeavours to follow the teaching of such large-hearted doctrines need have no fear but that "he will do to others as he would be done by." Before drawing to a close with the remarks I have been addressing to you, there is at present just one other subject to which I would direct your attention for a moment, and that is the recently-passed Veterinary Surgeons' Act. This Act, which I presume will be admitted by most, if not by all of you, to be a step in the right direction, is one which has been very tardily accomplished, is not even now all that could be desired; though I am forced to the belief that it is, perhaps, all that Parliament is likely, under present circumstances, to sanction. The Act, of course, could not be made

retrospective,* so that this enables all non-members who have been in practice, even though they may not have assumed the title of Veterinary Surgeons, to claim registration under the Act as "existing practitioners," and thus they gain a position or *locus standi* which otherwise they would never have possessed. Of course such men are registered on a separate list from members of the Royal College; but what I have to say is this, that this opens a door by which I am safe to say that there is not less than fifty per cent. of the blacksmiths of this country who could claim to be registered under the Act if they thought fit to do so.

It may not, however, be an altogether unmitigated evil to allow these men to be registered, if all such as are not registered within the specified time are to be for ever shut out from the protection given by the Act to those who are. On the other hand, the Act places us on a footing such as we never previously enjoyed—the title of Veterinary Surgeon, or Member of the Royal College of Veterinary Surgeons, being now undoubtedly and exclusively the property of the members of the profession—a thing it could never previously be said to be, so long as every blacksmith or quack in the country was at liberty to usurp and adopt it.

The Act, in addition to providing for the registration of members, initiates two different sections for Colonial and Foreign Graduates, which will certainly do justice to such graduates, if only sufficient care be taken that certain American, and other such bogus diplomas do not slip through, and allow their owners to enter the ranks of the profession, while they are totally unqualified to act the part of veterinary surgeons.

A very good, or rather very flagrant example of such a case came before me at a recent examination for the Veterinary Certificate of the Highland and Agricultural Society. A student there presented himself who held a medical degree from an American University, and as such was allowed certain privileges in the passing of the Veterinary Examining Board. Well, the result was that this "soi-disant" M.D. did not know the most elementary principles of anatomy and physiology, or of histology. Notwithstanding this, however, and the protests of at least two members of the Board, the result was that he was allowed to pass, probably not so much in virtue of his own examination, as more particularly, if not mainly, out of considertion for the indignity it would have been for us to have plucked a man who held a diploma of graduation in medical science.

I only mention this case to show that care ought to be taken to assess the Foreign and Colonial Diplomas and their possessors at their true value, and in order that those charged with the duty of allotting and distributing such diplomas under our new Act, should be put on their guard, and not fall into so reprehensible a practice as the one I have just alluded to, through a too confident and too high appreciation of the merits of such qualifications as may be presented to them. By the new Act, we have for the first time legally recognised our rights in, and possession of, the title we use; and in addition thereto, it has been made penal for any one from this time forward to assume such style or title. It should, therefore, become the aim of every member of the profession to do his utmost to show that we deserve and appreciate the boon that has been bestowed upon us. In the Act itself provision is made for the registration of all members, and in a separate section of all non-members who have practised for the last five years; which latter section, I am very sorry to say, will include all holders of the Highland and Agricultural Society's certificate, if they do not see it to be to their interest to conform with the rules of the Royal College, whereby they may be admitted therein. In addition to this, it also pro-

* It is retrospective for five years.—ED. *V. J.*

vides for the removal of all names of members who may have brought disgrace upon themselves or the profession, but gives them power to appeal against the decision of the Council of the Royal College to the Privy Council, if they are dissatisfied, and think it proper that they should do so.

The Register of the Royal College will thus become the only recognised medium through which the members of the profession will be known, as it is to be held conclusive proof of the status of all members of the profession. It will, therefore, give to the profession a means of dissociating itself from that class of would-be professional men who figure so frequently in the annals of the police and other courts of justice as veterinary surgeons, who have been guilty of some grave misconduct, and who thereby bring discredit and disgrace on our ranks, when, if the truth were only known, we would be exonerated from all connection with them.

It has been positively painful to me to observe how frequently the odium incurred by such men and their actions has been reflected on the members of the profession, who thus become the innocent victims of the misdeeds of these harpies who make it their business to prey upon the good name of the profession. Any measure, therefore, that has for its object the welfare of the profession, and the exposition of such men and their modes of action, will be cordially welcomed by all who have our general welfare and advancement at heart.

The passing of this Act, I need scarcely tell you, gentlemen, has been due to the almost unaided exertions of our worthy President, who has not only been at all the trouble, but, as we are informed by Professor Robertson, he has also been at all the expense of carrying it through Parliament, and has thus, I venture to affirm, placed the profession under a lasting debt of gratitude to him for his indomitable zeal, energy, pluck, ability and perseverance, in carrying it to a successful issue.

This action of Mr. Fleming's being, as I have said, a pure and unalloyed labour of love, resulting in the presentation to the profession of an Act which I trust will be alike creditable to its chief promoter and beneficial to those for whom he has devoted so much time, money and ability, and considering the deep debt of gratitude which we owe to Mr. Fleming in this connection, I do not think I could more appropriately conclude my remarks at this time, than by moving, as I now do, that we accord a hearty vote of thanks to the President of the Royal College of Veterinary Surgeons, for his munificent gift—(Applause)—and I beg to suggest that a resolution be adopted by this meeting, conveying to Mr. Fleming our acknowledgment of his services in some such words as these, viz.:—"That this meeting, recognising the many great benefits conferred upon the profession by Mr. Fleming, President of the Royal College of Veterinary Surgeons, but having reference more especially to his zeal, energy, and ability in being chiefly instrumental in framing and passing through Parliament the Veterinary Surgeons' Act, 1881, desire to put on record their appreciation of his great services in this respect, and to tender to him their gratitude, and united and hearty thanks for his indefatigable labours and magnanimity in securing this piece of legislation; believing, as they do, that the Act will not only prove a boon to the profession generally, but will also become a safeguard and an advantage to the public at large. That this resolution be recorded in the Minutes, and a copy transmitted to Mr. Fleming by the Secretary."

Apologising for the length of my address, and for the desultory character of my remarks, I will now conclude by expressing the hope that our Society may long continue to develope, and become more and more useful to the members of the profession, both scientifically, individually, and locally, as well as that it may fill up another portion of the field so long left vacant

in this district, for that united political action so desirable when any question of general professional importance finds its way to the surface, and becomes for the time a burning question, and one requiring both immediate and earnest consideration.

In your hands, gentlemen, now remains the issue of our present enterprise. In conclusion, therefore, let me again impress upon you the importance of the fact that it is only with much patient, earnest labour and forbearance on our part, as well as by the exercise and display of an important degree of individual enterprise and enthusiasm, that we are ever likely to attain to such a desirable consummation as the assurance that our efforts have been crowned with success.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE sixty-ninth quarterly meeting of this Association was held at the Medical Institute, Hope Street, on Friday evening, November 18th, 1881; the President, C. W. Elam, Esq., in the chair. There were present Messrs. Reynolds, Moore, Morgan, Kitchin, Bain, and the Secretary, of Liverpool; Messrs. Greaves, Hopkin, W. A. Taylor, Faulkner, P. Taylor, S. Lock, and T. Taylor, of Manchester; Messrs. Storrar, and R. C. Edwards, of Chester; Whittle, Worsley; Woods, Wigan; and Cartwright, of Holywell. Letters regretting their inability to attend were received from Messrs. G. Fleming, M. J. Roberts, and A. Lawson.

The minutes of the previous meeting were read and confirmed.

Messrs. W. A. Taylor, R. T. Bell, and S. O. Langley were unanimously elected members of this Association.

Mr. Morgan nominated Mr. C. Cartwright, of Llan Asa, Holywell, as a member of this Association.

Mr. W. A. TAYLOR then read his paper on "Some of the Effects of Stimulation," which provoked a long and interesting discussion, in which most of the members took part, the majority being in favour of giving stimulants, more particularly in chest affections.

The Treasurer presented his financial report for the year. He proposed that the usual donation to the Children's Infirmary, and gratuity to the hall-keeper be given, which was seconded by Mr. Moore, and unanimously carried.

The following gentlemen were then elected officers of the society for the ensuing year, viz.:—Mr. W. Leather, President; Messrs. Elam, Kitchin, and Faulkner, Vice-Presidents; Mr. Morgan, Treasurer; and Mr. J. W. T. Moore, Secretary.

Votes of thanks to the retiring President, Treasurer, and Secretary, and to Mr. Taylor were carried by acclamation, terminating an interesting and instructive meeting. J. W. T. MOORE, *Hon. Sec.*

SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

A MEETING of this Society was held on the 30th November, 1881, in the London Hotel, St. Andrew Square, Edinburgh.

Present—Professor McFadyean, who occupied the chair; Professors Baird, Walley, Lewis; Messrs. Connochie, Selkirk; Cunningham, Slateford; Mitchell, Bathgate; Young, East Calder; Constable, Inchture; Reid, Leith; Rutherford, Leith; Grey, Kirk, Fairbairn, Captain Hayes, Connochie, jun., Bradshaw, and R. Rutherford, Edinburgh; as also the representatives of the press.

The minutes of last meeting being read and confirmed, the Secretary read a number of letters from gentlemen regretting their inability to attend the meeting.

The SECRETARY nominated for membership Mr. J. H. Bryce, Stirling; Mr. Constable, Inchture; Professor Lewis, Mr. Fairbairn, and Mr. A. Gray, jun., Edinburgh.

The following gentlemen were elected to the various offices of the Society for 1882:—President—C. Cunningham, Esq., Slateford; Vice-Presidents—R. Reid, Esq., Leith; M. Mitchell, Esq., Bathgate; J. Young, Esq., East Calder; Secretary and Treasurer—R. Rutherford, Edinburgh.

The SECRETARY laid before the members a letter from Mr. Moore, Hon. Sec. of the Liverpool Veterinary Medical Association, with an enclosed copy of a circular note from the Central Veterinary Medical Society. The circular was to the effect that the members of the Central Veterinary Medical Society were of opinion that the papers read and discussed at the different Veterinary Medical Associations deserved full and separate publication, and wished to co-operate with other Societies in publishing transactions every week, etc., etc *

Mr. Moore requested to know if the Scottish Metropolitan Society had received a similar circular, and, if so, the result of the discussion thereon.

No circular having being sent to this Society by the Central Veterinary Medical Society, the subject was not discussed, but a few remarks were made by the President and others, all tending in the direction of this Society being perfectly satisfied with the publicity which was given to their transactions in the presently existing two veterinary publications.

The SECRETARY was requested to communicate to that effect with Mr. Moore.

The SECRETARY introduced to the notice of the members "Hartmann's Patent Rubber Sole Pad," which was in use by Professor Baird and himself, and was giving satisfaction.

Professor WALLEY exhibited an ingenious arrangement, the invention of one of his students, Mr. Smith, Tranent, whereby all a farrier's tools were combined in the pincers. The instrument, doubtless, if made stronger, would be a useful one, and has this in its favour, it obviates the necessity of at times carrying a whole set of tools about.

Professor WALLEY also exhibited an "Improved Trephine" on the brace-and-bit principle, but having the movement governed by a side-wheel arrangement.

Also brought forward a new method of shoeing horses, as proposed by Mr. Hallen, M.R.C.V.S., etc., India.

The remarks he made thereon led to considerable discussion. All the members were unanimous in thinking the system was quite inapplicable in this country, and those present of foreign experience knew of no condition under which it could be otherwise, the hoofs being exposed to wear and tear.

The following monstrosities were exhibited by Professor Walley:—

Three Perocephalic Heads.

(*a*) Calf.—Absence of sup. maxilla and nasal bones, with elongation and curvature of inf. maxilla. Forwarded by Mr. Leach, Boston.

(*b*) Lamb.—Perocephalic cyclops. Absence of sup. maxilla and nasal bones; small proboscis, with elongation and curvature of inf. maxilla. Forwarded by Allan Woodrope, Esq.

(*c*) Lamb.—Inferior maxilla wanting. By Mr. Kinnie, Student R.V.C.

The SECRETARY read notes of a successful case of puncture of the bowel,

* We understand the circular was issued by Mr. Hunting without the authority or cognizance of the Central Society.

for the relief of Gastro-colic Tympany. The animal operated upon was a valuable and powerful young draught-horse, the symptoms exhibited at the time of operation being such as indicated a speedy death from suffocation, or a slower one from rupture of the stomach or bowel, unless speedily relieved. The eructation of gas per œsophagus from the stomach was almost constant, rendering the giving of remedies by the mouth not only difficult, but hazardous. It was equally impossible to relieve him by enema, the pressure in front from the distended bowel being so great as to displace the viscera outwards. The operation gave instantaneous relief. The wound was closed with a pin suture, and gave no further trouble. A dose of physic was given, which operated next day, and the animal went to work in a few days perfectly well.

A good deal of discussion followed the reading of the notes of the case. Professor Walley highly approved of the operation, frequently resorted to it, and was surprised it was not more in vogue. He also suggested that in those cases of dangerous Gastric Tympany of which this case was typical, a small opening might be made into the œsophagus, and a tube, say a catheter, be passed thence direct into the stomach, through which gas could escape.

Mr. CONNOCHIE related a case where he had performed the operation, giving immediate relief from the Tympany. In his case, however, the animal subsequently died of Pulmonary Apoplexy, a condition doubtless induced by the impeded respiration, etc., the result, and always a prominent feature, in a dangerous degree of Tympany.

The SECRETARY, in replying to some of the remarks made, pointed out that he had performed the operation several times most successfully; that its non-success frequently arose from its being done too late, when, in fact, rupture had already occurred; and that as far as his experience went, and as far as he could learn, the operation was one which had little or no risk about it.

Mr. ALEXANDER GREY, jun., read a paper, a most interesting and elaborately wrought out one, on "Amyloid Infiltration in the Liver of a Horse," sections of which were displayed to the members under various microscopes. The disease was believed to have been induced by the lowering effects of two large and old-standing abcesses, which resisted all attempts to heal them.

The PRESIDENT, in referring to the paper, claimed that it was the first case of the kind recorded by a veterinary surgeon; but it was pointed out by Mr. CUNNINGHAM and Professor LEWIS that Professor Williams had described the disease as occurring in the horse and also in birds.

It was resolved that Mr. Grey's paper be forwarded to the *Veterinarian* and VETERINARY JOURNAL for publication.*

Professor WALLEY'S paper on "Stomach Staggers in Dairy Stock," read at last meeting, and published in the interim in the professional journals, was then discussed with considerable animation. The outcome of the discussion would seem to show that the disease as it occurs in Edinburgh and this neighbourhood, is much more dangerous than as it occurs in country districts; it is also more common, and no doubt both these features of it arose from the system of feeding. It was pointed out how in early winter the common cause of it was the giving of large quantities of frozen turnips, which of course had to be thawed at the expense of the stomach; and how, later on in the season, it arose from the giving of the same turnips when their interior was altered to the resemblance of pith or cork, and quite indigestible. Too much bean meal was also shown to be a cause, as was distillery draff, more so than brewers'; also want of exercise, and general too high feeding to produce milk. With regard to treatment, it was held useless in many cases to attempt any, butchering being recommended if the animal down was in

* This interesting paper will appear in next issue.

good condition ; and in those cases where it seemed likely to be of avail, purgatives in combination with stimulants and vegetable tonics, the two latter to be frequently repeated where that had been found most useful. It was not considered advisable to repeat the purgative if saline. Oil might be given freely, and the animal encouraged to drink freely. As adjuncts, stimulating the spine and abdomen should always be resorted to, and every attention generally be paid to the animal's comfort.

Votes of thanks were given to the President for presiding, and to the gentlemen who had brought forward subject-matter for discussion, after which what had been a most instructive and pleasant meeting was brought to an end.

R. RUTHERFORD, M.R.C.V.S., *Sec.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Association was held at the Blackfriars Hotel, Manchester, on Thursday, December 15th, 1881, Alexander Lawson, Esq., in the chair.

The following members and friends were present : Mr. George Fleming, President of the Royal College of Veterinary Surgeons, and Mr. T. A. Dollar, of London ; Messrs. Peter Taylor, T. Greaves, Tom Taylor, T. Hopkin, W. A. Taylor, J. B. Wolstenholme, W. Dacre, M. J. Roberts, James Ingram, E. Faulkner, John Lawson, — Green, and S. Locke, of Manchester ; Messrs. C. W. Elam, W. Leather, J. W. T. Moore, A. Bain, J. Leather, Geo. Morgan, R. Reynolds, and E. Hitchin, of Liverpool ; W. Whittle and E. Leech, of Worsley ; J. Atkinson and A. M. Michaels, of Stockport ; John Bunnell and Jas. Hart, of Oldham ; W. Woods and W. Woods junr., of Wigan ; J. Marshall, Knutsford ; H. Furgusson, Warrington ; J. Litt, Bolton ; J. Polding, Burnley ; Peter Walker, Bradford ; H. Beard, Macclesfield ; T. Briggs, Bury ; — Crawford, Esq., 2nd Dragoon Guards, Manchester, etc.

Apologies for non-attendance were received from the following gentlemen : Messrs. J. H. Fergusson, M. E. Taylor, W. A. Cartwright, G. H. Darwell, R. Roberts, J. Welsby. W. G. Schofield, J. Storrar, S. M. Wilson, and Professor W. Williams.

Mr. GREAVES proposed, and Mr. JOHN LAWSON seconded, that Mr. James Storrar, of Chester, be elected a member of this Association. Carried unanimously. Mr. W. Woods, junr., of Wigan, was also unanimously elected a member of this Association.

Mr. M. J. ROBERTS nominated for membership Mr. Donald Gregory, of Darwen.

Mr. E. FAULKNER nominated Mr. William Leather, of Liverpool.

Mr. S. LOCKE nominated Mr. James Eltoft, of Lancaster.

Mr. PETER TAYLOR proposed the following resolution, seconded by Mr. THOS. GREAVES : "That a memorial expressive of the deep sympathy of the members of this Association be transmitted by our President and Secretary to the widow and family of the late Mr. James Brookes, of Pilkington, near Manchester."—Carried.

Mr. GREAVES then opened the discussion with regard to Mr. T. A. Dollar's motion respecting letter signed "Lancashire," in VETERINARY JOURNAL of September. The discussion was very animated, the following members taking part : Messrs. G. Fleming, T. A. Dollar, C. W. Elam, R. S. Reynolds, Peter Taylor, T. Hopkin, T. Taylor, W. A. Taylor, J. W. Moore, W. Woods, etc. The motion was ultimately rejected.

Mr. J. B. WOLSTENHOLME moved, and Mr. E. FAULKNER seconded, the following resolution, which was unanimously carried : "That this meeting

desires to record its high opinion of respect and esteem for the gentlemen in question (*i.e.*, those referred to in 'Lancashire's' letter), and to express its opinion that anonymous correspondence in any journal does not come within the functions of our debate."

A cordial vote of thanks having been accorded to the retiring office-bearers, Mr. Alexander Lawson was unanimously re-elected President for the ensuing year; Mr. E. Faulkner was also re-elected Treasurer.

Mr. J. B. Wolstenholme was elected Secretary; Messrs. T. Taylor, T. Hopkin, and W. A. Taylor were elected Vice-Presidents.

The Treasurer having read his report for the past year, the meeting terminated.

SAM. LOCKE, *Hon. Sec.*

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE regular fortnightly meeting of this Association was held on Nov. 8th, at the Veterinary College; Dr. Wm. McEachran, 2nd Vice-President, in the chair. Messrs. C. P. Drake and John Henry, jun., were elected members, and Mr. E. Crundell was proposed as a member. After preliminary business, Mr. Alexander Glass was called upon to read his communication on Influenza. He described a very interesting case which was complicated by a peculiar rash, which Mr. Glass considered to be Scarlatina. A lively discussion followed, after which Mr. M. C. Baker, V.S., read an interesting paper on the subject of "Foot-and-Mouth Disease," a subject which Mr. Baker, being Government Inspector at this port, has paid great attention to. He described fully the history, causes, symptoms, treatment, and consequences of this disease, which caused loss, not only from the direct loss by death, but also from the loss in condition, quality, and milk. He fully described the various means to be adopted in preventing the introduction of and stamping out of the disease when present in any country. He was pleased to state that this disease was unknown in Canada at the present time, and with the present efficient system of quarantine was sure that it was next to impossible for this or any other contagious disease to obtain a foothold in Canada. A lively discussion followed the reading of the paper, in which many interesting points were brought out by the members as to the transmissibility to man, the use of flesh for human food, etc. A vote of thanks was passed to the readers of the papers. At the next meeting Mr. D. E. P. Campbell will communicate a case-subject, "Injuries to the Eye," and Dr. Wm. McEachran will read a paper on the subject of "Tetanus."

The next fortnightly meeting of this Association was held on Nov. 24th, Dr. Jas. Bell, President, in the chair. Mr. E. Crundall was balloted for and elected a member of the Association. After further general business, Mr. D. E. P. Campbell described a case of opacity of the cornea of two years' standing, which he had treated by the application of calomel, followed by a 5-grain solution of argentine nitrate, and had a good recovery. Dr. Wm. McEachran read a paper on the subject of Tetanus. He described very fully and graphically the history, causes, symptoms and treatment of the fearful malady. He spoke of the fatal character of the disease, and said that nothing makes us feel our helplessness in combating disease, and at the same time the terrible nature of disease, than to witness a noble horse die of Tetanus. The agony which is depicted in every feature of the poor dumb creature pleads strongly for our help; but such help as we can give can only at most alleviate the suffering, except in rare cases. In speaking of the treatment, he stated that in this city during the past summer the majority of cases were due to injuries from picking up nails in the street, the result of throwing ashes containing them on the streets. He recommended, when a horse picked up a nail, that the nail being extracted the foot should be pared down and the

soft parts exposed, so as to prevent any irritant remaining in the wound; following this the wound should be poulticed, and some sedative applied to allay irritation and pain. Owing to the high nervous excitement present, absolute rest and perfect quiet are essential. In speaking of the internal treatment Dr. McEachran stated that there was no remedy known which could be said to cure the disease, though the pharmacopœia had been ransacked and tried in vain. The indications, however, were always to relax the spasms and allay the extreme pain which the animal suffered. The essayist had tried various remedies to effect this purpose, and was satisfied that belladonna, in the form of the solid extract, gave the best results. Hypodermic injections he had found to cause such violent spasms that he had ceased to use them. He concluded by describing some of the cases which had come under his observation during the past twelve months, one of which was in the practice of the College, and had recovered. The sedative which had been used in this case was belladonna; and another case, in the practice of Mr. Wm. Jakeman, V.S., Halifax, had also recovered under the use of belladonna alternated with chloral hydrate. In the discussion which followed, Principal McEachran and Mr. C. J. Alloway, V.S., both related interesting cases which had recovered in their hands. Mr. Alloway advocated hydrocyanic acid as the sedative and anti-spasmodic. The President, Dr. Bell, said that as a medical practitioner, he was astonished to hear the large percentage of recoveries which had been stated. In his experience in human practice, in the General Hospital, he had seen only two cases of recovery, both of which were chronic Tetanus. He considered that, theoretically, opium was the best anti-spasmodic and sedative which could be used, as it did not, as many others, depress the heart's action. He had never given it a fair trial. There was a great deal, he thought with the essayist, to be learned yet concerning the pathology and etrology of the disease.

A vote of thanks was passed to the readers of the papers, after which some pathological specimens were exhibited by Mr. A. W. Clement, and the meeting adjourned till December 8th, when Mr. Paul Paquin was to communicate a case and Mr. Fred. Torrance to read a paper.

ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council meeting, held on Dec. 7th, the Hon. W. Egerton, M.P., reported that the Committee had received the following statement from Professor Robertson, Principal of the Royal Veterinary College, with reference to the proposal to carry out practical experiments on Foot-and-Mouth Disease:—

With a view to obtain some information of a directly practical character and tendency respecting the management and spread of Mouth-and-Foot Disease, it is proposed by carrying out a few experiments to determine:—

First, the possibility, by treatment, to cut short or to mitigate the severity of the disease, as also the nature of the treatment or agents best calculated to serve these ends.

Secondly, if it is possible, by treatment, to mitigate the severity of the symptoms, to determine whether such treatment lessens the potency of the infecting virus.

Thirdly, to discover whether the employment, as preventives or protectives, of any agents, local or systemic, confer upon the animals a power of resisting contamination from recognised sources of contagion.

For the purpose of carrying out these suggestions, it will be needful to possess the management for some time—probably twelve weeks—of a considerable number of animals suffering from the disease in accessible situations; also to possess, by purchase, a limited number of healthy cattle

and sheep upon which to test the disease-producing power of disinfected manure and other excretory products.

The Committee, having adopted this report, recommended the grant of £250, of which they had given notice, for the ensuing year. The Committee had met eight times, and made seven reports; and they recommended that the following constitute the Committee for next year:—General Viscount Bridport, Lord Moreton, Sir M. W. Ridley, Mr. Allender, Mr. Ashworth, Professor Brown, Mr. Chandos-Pole-Gell, Hon. W. Egerton, Mr. G. Fleming, Mr. S. P. Foster, Mr. M. J. Harpley, Colonel Kingscote, Professor Robertson, Mr. Sanday, Dr. Burdon Sanderson, Professor Simonds, Mr. R. Stratton, Mr. Wakefield, and Mr. Jacob Wilson.

Professor Simonds said he was authorised by Professor Brown to state that he had mentioned the subject of the proposed investigation into Foot-and-Mouth Disease to the Lord President of the Council, who gave it his entire approval. In fact, Earl Spencer was exceedingly pleased to know that such an investigation was about to be made. There was good reason for believing that the existing regulations were greatly neglected, and the Lord President was of opinion that the money of the Society could not be spent to greater advantage than in the manner now proposed.

Jurisprudence.

DUNBLANE (SCOTLAND) SHERIFF COURT.

"ROARING."

HOME *v.* WALKER.

THE following evidence was recently led before Sheriff Grahame, in supplement to that heard in a previous case, arising out of the one transaction:—

William Walker deponed: Pursuer told me what he wanted the horse for. He did not say he wanted a horse to ride as well as work on the farm. It was only said that he wanted a horse for working on the farm, and for his grieve to look after his work with. He did not say anything about driving. I bought the horse from Scott and Croall about three or four months before I sold him to pursuer. At the time pursuer saw me and bought the horse I just gave him the warrandice I wrote to him. (Q.) Did you warrant the horse as a good worker in all kinds of farm-work? (A.) Yes, I said that.—(Q.) Did you say there was nothing wrong with his wind, or in any particular? (A.) No.—(Q.) You say you did not say he was sound? (A.) No, I did not say he was sound. When pursuer purchased the horse I mentioned the three days' trial. Three days' trial was mentioned at Stirling. I said he would get the usual Perth trial of three days.—(Q.) What is the Perth trial? (A.) If you buy a horse in Perth Mart and do not return him in three days he is your property.—(Q.) In the Perth trial of three days is there any reservation as regards the wind of the horse being good or bad? (A.) I do not know; there are plenty of horses sold with broken wind—with all kinds of wind.—(Q.) Do you know if in the Perth trial there is any reservation that if a horse is wrong in the wind the three days' trial does not apply? (A.) I do not know whether that is a fact or not.—(Q.) But there may be an exception with regard to wind? (A.) I have got horses from Fraser and Macdonald, and all things appeared right about them, but they turned out otherwise, and

I had just to keep them.—(Q.) Do you know, as a matter of fact, whether there is any exception in regard to wind? (A.) No, I do not. I am very seldom there.—(Q.) Do you consider a roarer an unsound horse? (A.) No, I do not.

By Mr. Jenkins: Previous to my selling this horse to Mr. Binning Home I had worked him regularly in all kinds of work on the farm. He wrought very well. I have seen him at work within the last two or three days. We tried him in a plough and then put him in a waggonette and a reaping machine. Why, there could not be a better working horse; I myself saw him working in all kinds of farm-work.

Re-examined: My farm is very bad to work. Some parts of it are clayey, and all very hilly. I cannot tell how long he was tried in the plough—a few 'boutings. One end of the rig would take five or six minutes. I cannot tell if we had him working half-an-hour.—(Q.) Was it an hour, or two hours, or three hours? (A.) No; it would be about half-an-hour. He was first yoked in the plough, and then we tried him in the waggonette. After he was taken out of the plough we drove him round by St. Ninians into Stirling, fully more than a mile and a half—about two miles. I did not see him long in the reaping machine. I went away shortly after he was started, but he was to be well tried. After he was taken out of the reaping machine we had him in the waggonette with five people. He was in the plough about half-an-hour to-day, and also in the reaping machine. He would be about ten or fifteen minutes in the waggonette between Torbrex Farm and Stirling.

George H. M. Binning Home, the pursuer, deponed: The horse was to be used for my own personal convenience in riding to Kelso, and riding anywhere I might require, and doing farm-work when I was absent. As to what was said about his being for my overseer to ride upon, it was for no such purpose, because he has his own two legs and does not use a horse.

Cross-examined: I have never seen the black horse working at farm-work. It did not strike me to try it at farm-work. I saw it was quiet in harness. The horse might work on the farm when I was away from Softlaw; he was for that purpose. I have been nearly two months there last summer. I returned the horse because he was defective in the wind. The warranty was right enough as regards going quiet in harness, but in doing farm-work I cannot say whether he is capable of doing that, but it is the only work it is fit for, or any slow work. Nothing was said about a Perth trial when I purchased the horse.

Re-examined: This horse might be an honest worker on a farm, but fast or hard work would be too much for it. It might drop dead any moment if put to that.

Duncan M'Farlane, V.S., Doune, deponed: I would be inclined to think the horse would be fit for farm-work, but not for all kinds of work on all kinds of farms. I do not think the horse, when I saw him, was fit for any kind of farm-work he could be put to. He would not be so able for work as a sound horse would be. He would for some kinds of light work. If put alongside any sound horse he would not be able to keep up with it, if the sound horse was working fairly, without showing signs of distress. I do not think he was fit for harness work, doing a good day's work either as a riding or driving horse, without distressingh im very much, at least if put to some kinds of work that harness horses are put to. I do not think he was a horse to be trusted for a whole day at farm-work. I saw the horse last week again. I found he was no better in the wind than when I saw him before. He showed it worse. I saw him with a man on his back, with saddle and bridle, at Torbrex last week. I would see any defect in his wind better that way. The conclusion I came to last Friday was that I considered him bad in his wind. I would term him a roarer. I have no doubt whatever he was

a roarer. He was not put to a more severe test last week than at the time before, except that I had advantages for testing him that I had not before. I noticed his feet last Friday. They had been new shod. They were well rasped down and the soles pared, and they presented a better appearance than when I saw them six months before. The horse was likely to improve in his feet if he had not been working, but going about a loose box or on soft grass. A horse bad in his wind is more likely to improve if he is not working than if he is working hard work. I saw the horse at Doune Fair. His feet seemed to be large, with symptoms of tenderness. I consider him more inclined to go on his heels than if he were a sound horse. He was running on soft ground at that time.

Cross-examined: I examined this horse first on 4th May. I did not see him again till shortly after the last trial in Stirling. He was at the smithy. I examined his soles with his shoes on. I found the soles not appearing to be so bad as I considered them before the shoes came off. The shoes were sunk into the feet at the time. I saw him at the farm. When I saw him on the farm and at the smithy my opinion was that he had been suffering from Laminitis. There was no inflammation about his feet that day I saw him in the smithy. I was in Stirling that day, and I examined the horse to satisfy myself more thoroughly about the state of his soles. I said to the man who took off the shoes that his soles were not what I expected to find them. I meant that he was not down in the soles, at least to the extent I considered he would be. The horse appeared not to have been shod for some months before; that made his feet look larger. The sole was slightly greened. I do not remember if the smith offered to pare down the soles.—(Q.) Do I understand you to say that there was nothing wrong with the horse's feet? (A.) No, I did not say that; I say that the soles were not down. The outer sole showed that there had been a Founder, especially the off fore-foot. There was a ring round it. These rings are indications of health as well as of disease. There are rings about the feet when they are not rasped. A healthy ring is different from a diseased ring. If a horse is diseased the ring is not so large as when it is healthy. The rings converge into the toe when there is disease. In this case the ring was more apparent at the toe. We did not get a good opportunity of testing the horse the first time I examined him. From what I have seen of the horse since, I am of opinion that the wind is a more serious objection than the Laminitis. This horse is a roarer—a bad roarer. I was not wrong in my previous examination when I said the horse was thick-winded. "Thick-winded" is our term, which signifies an unnatural sound in breathing. It is different from broken wind. I consider broken wind is fully the worst of the three. Instead of saying the horse is slightly affected in the wind, as I did in my previous examination, I now say he is a bad roarer. This was the decision at my last examination of him. He was running about. He roared very badly. In consequence of his being a bad roarer he will be a bad worker. I did not go near the horse at Doune Fair to examine him, but I saw him running about.

Re-examined: Laminitis symptoms are likely to disappear under the hands of a skilful smith by paring. Laminitis is very likely to appear again on slight cause. A horse that has had Laminitis is bound to be more tender on the feet than if he had not had it. Symptoms of Laminitis may disappear altogether if it has not been an acute attack.

James M'Call, Principal, New Veterinary College, Glasgow, sworn, deponed: I have had large experience in regard to all kinds of horses, and all kinds of diseases in horses. On Friday last I examined a black gelding in Mr. Walker's stables in Stirling, said to have been purchased by Mr. Binning Home some time ago. I found a well-marked ring round the hoof of the

off fore-foot. I look upon that ring as indicating that the animal has had some irritation in the foot, probably inflammation of the laminæ, or Laminitis, or Founder. (Witness produced specimen hoof of a horse that had suffered from Laminitis.) Inflammation of the laminæ or the strictures that sling the pedal bone up to the hoof, causes that bone to fall down, and instead of being slung to the hoof it rests upon the sole and makes a plain-footed horse. When we have that irritation in the foot invariably, we get a thicker growth on the hoof, which accounts for the ring. The black horse had a well-marked ring on the off fore-foot, and on the other it was not well marked, therefore I infer that the horse had had disease in the foot. I do not say that it was Laminitis, but generally it is Laminitis that leads to the formation of these rings. When you have inflammation of any part there is always more blood directed to it, and in consequence more growth, and this thickness of the hoof is due to the extra quantity of blood determined to the foot under the inflammatory process, and when the inflammation goes off it leaves it larger than usual, and more blood passes to the foot. My conclusion is that the horse had been subject to irritation, leading to inflammation, some time before I saw the horse. It is consistent with the ring I saw on this horse that it had Laminitis ten or twelve months before. New rings come down as the hoof grows away. I do not know that I could have said four or five months ago, after looking at the foot, what was the cause of the ring. This was a horse having good high action, and that would lead to a greater pressure on the foot when he was set to work. From the condition of the animal I saw that he had not been worked for some time. I trotted him with a man upon his back in saddle and bridle. He went very freely in his walk and in his trot, but I do not think, from the formation of his feet, if he had been at work regularly he would have gone as freely as he did. If put to work I do not think he would go as well as he does in a fortnight. If properly attended to the feet would get well. The feet seemed to have been rasped so as to give them the best possible face. A good deal can be done by rasping and paring to extirpate the traces of the ring or of Laminitis, but you cannot alter the shape of the foot. As to wind, I find that the horse is a very bad roarer. I had not the least difficulty in finding out that. I tried him at both a trot and a canter. Whenever he struck into a canter he commenced to roar at once. He is a very bad roarer, and will be all his life. If that horse were put in harness or in saddle he is not able to do a fair day's work without being distressed. He might do a fair day's work at a walk with a man on his back, but he could not do a fair day's work with a man on his back at a trot or in double harness ; on a hill road he would be distressed, however light he may be. It would be impossible for him to keep up with a sound horse in ordinary harness work. Roaring is a perfectly incurable disease. From the confirmed nature of the Roaring in his case he must have been a roarer for a considerable time. "Thick wind" and "broken wind" are names that are known amongst veterinarians. A roarer is the worst of the three. A roarer is worth a good deal less in the market than a sound horse, especially if he is a saddle horse. A roarer is only useful for slow work. Roaring is a progressive disease, and gets from bad to worse. The term "good worker" would imply both the desire to work and the ability to work in all kinds of farm-work.

Cross-examined: I found symptoms of disease in both feet, but much more marked in one than the other. I am not prepared to swear positively what the disease was, but I am inclined to say it was Laminitis. That defect most decidedly renders the horse unsound. It has been a severe case, I think. I am not prepared to say how long it has been there, or how long since. If this animal has been doing nothing since November, it is not likely he would have an attack of Laminitis going idle in a loose box, but he

might have. The formation of the foot, the horse's action, and the ring, all put together, showed that the horse was suffering from Laminitis. There was no contraction of the foot; it was rather an open foot. There was a well-marked ring, which could not be there except there was inflammation. The ring may have been there and the horse not suffering from Laminitis. A healthy foot, as a rule, shows no ring. There is no change in the character of the ring when there is disease, but one ring is much deeper than the other, and that depends on the intensity of the inflammation. If there is a ring there it is due to some irritation. It is not easy to say what was the cause, whether Laminitis or what it was. I will not swear that the ring was the result of Laminitis. I found no inflammation in any of the feet. It went with very free action, and that was the reason, perhaps, why its feet were so bad; it was too free and high-stepping. The horse went well. Any degree of unsoundness in a horse's feet would constitute unsoundness. With reference to the Roaring, I observed that the horse was a roarer. Whenever he started to canter he made a desperate noise, and I do not think there was any person in the whole yard who did not hear him. A horse going idle in a loose box and then worked in that way will make more noise than if regularly worked, but still he will roar all his life, no matter what condition you put him into. It is impossible to tell how long this Roaring had existed; all I can say is that he is an inveterate roarer. Sometimes a horse will make more noise than at other times. A horse may take a cold and afterwards turn roarer, generally in three weeks. It is a severe cold that makes a horse a roarer, and you do not warrant a horse in three weeks, if it is that time before he gets better. I believe a horse might become a roarer suddenly. It is quite possible this horse was not a roarer in November last. Sometimes a horse is condemned as a roarer when he is not a roarer, simply because he is suffering from a cold. A roarer may be a willing worker. A roarer may be fit for farm-work. It may be made too heavy for him, or pressure might be put upon him, but so long as he gets the work done he can go about his work roaring. I have seen the warranty in this case. The horse is described as a dark horse, warranted quiet in both double and single harness. It is a true description of the horse so far as it goes.—(Q.) And "a good worker in all farm-work," is that a true description of the horse? (A.) No.—(Q.) Wherein is it wrong? (A.) In the ability of the horse to prove itself. I have seen the horse with a man on his back, cantering, and he appeared distressed, and roared. I would not say that was an animal to go in double harness.—(Q.) Do you not know there are horses as bad roarers as this one you might consider good workers? (A.) No.

By the Court: Laminitis does not come on without a cause. Sometimes it comes on from doses of purgative medicine. It is not a constitutional disease. The formation of the foot very materially assists the development of the disease. It would arise from a very slight exciting cause. A horse that has good high action, and hammers his feet, is very liable to take it. This horse was not a flat-footed horse; he has a sort of fozzy hoof, an open porous hoof, a hoof that is specially liable to this disease, and his high action made him more so. When I saw the horse he was very well shod, and the hoofs were well pared to make them as neat as possible.

Thomas Walley, Principal of the Edinburgh Veterinary College, deponed: I have had large experience in regard to horses and their diseases. I to-day examined a black gelding at Mr. Walker's farm of Torbrex, said to have been purchased by pursuer from defender. The horse had been recently shod. I noticed the condition of the hoofs. The hoofs had been rasped a good deal, and the sole was very much shaved. I noticed around the corona of each hoof a distinct ring, especially in the off fore-foot, giving

evidence of Cornitis or Laminitis, or both, at some past date. These two things arise from the same cause, and often the one runs into the other. They are both a species of inflammation. There might have been other traces on the foot before the rasping. It is an easy matter to remove them unless they are very deep. Unless Laminitis is very severe, the alterations in the structure of the foot are not prominent, and if not severe the foot may be restored to its original condition, or it may degenerate into Chronic Laminitis. The effect of Laminitis is to leave the foot tender, and more liable to a second attack from a very slight cause. The ring on the horse's foot was caused by inflammation which existed a considerable time since, but it is impossible to say what time. It must have been a considerable time, at any rate. The coronet ring I saw might be removed temporarily to a certain extent, but it would come back again. If that horse had been going in a loose box or on soft ground for the last six or eight months without working, the foot would naturally improve in that period supposing it had Laminitis previously. Attention to the feet and this treatment would ameliorate the inflammation. I examined the horse as to his wind. I found he was a distinct roarer. I galloped him with a man on his back. The Roaring was quite confirmed and is now incurable. If this horse had a long rest—say six or eight months—and was well treated, the Roaring symptoms would be ameliorated. Roaring is unsoundness in a horse. This horse could not be warranted as sound. He was not a horse able for heavy farm-work, but could do light farm-work, though with some stress to himself. He might do work on a clay farm, though with some distress to himself. He would not be able to keep up with a sound horse without a good deal of distress. Some horses' nervous temperament will enable them to keep up for a short time to anything, but they suffer from it afterwards. This horse would roar, but he could go on with his work all the same. If he were not sore pushed, and kept at one steady pace and not much upon it, he would not make much noise—at least if he is in the same condition as I saw him in this morning he might get on very well. Roaring varies very much, some days they are worse than others. If a horse is a proper worker you do not much heed his roaring. I do not believe this horse could be classed as a good sound worker in all farm-work. He would be distressed on being put to any heavy work, both in driving and in double harness work. If thoroughly sound this horse would be worth about £40. That would be a fair price for him. The symptoms I saw considerably depreciated the value of the horse. I consider a horse, to be a good worker in all farm-work, must be free from organic defects, and that particularly applies to the respiratory organs and the heart, and any defects of the limbs. Roaring is an organic defect of the larynx, and a horse with such a defect is not a sound horse. He might do certain harness work, but he could not be classed as a sound worker.

Cross-examined: I have seen the warranty in this case. I believe that warranty differs from a warranty of soundness. A good worker is a horse able for any amount of work. You cannot call that a warranty of soundness if there is not a word about soundness in it. You might buy a horse for the same money, and worth it, but, at the same time, if he is not warranted sound in writing you cannot expect that he must be sound. The date of the warranty is 23rd November, 1880. I cannot say that that was not a true description of the horse at the date of the warranty. That ring could not have been round the foot without disease being there. It is not usual to have such a ring in a sound foot. According to my knowledge, the ring would not have been there unless there was some disease previously. I cannot say that I have seen a ring without there having been previous disease in the foot. I have seen rings on horse's feet where there was no disease. The crust in natural rings is smooth in its normal condition; there is a con-

siderable ring of hypertrophy of a totally different character to that which you get in a diseased hoof, and when the animal gets old it passes away generally. It was only from seeing the ring that I thought Laminitis had been there. Judging from the condition of the ring, the horse has had Coronitis at some past date. I cannot tell at what time this Laminitis or Coronitis has been there, but it must have been months; it would not be years. Practically the horse is not unsound from this ring being on its foot; practically he is sound. He might be going lame when the ring was forming. I should look more seriously upon the Roaring than upon his foot. I saw him working in the plough. He did not roar very much in the plough. He did not roar so much as in cantering up hill. After the horse works a while he would become worse. I do not say he is unfit for farm-work, but he is not able to do the amount of work a man would expect from such a horse after having given such a price for him. I have not the slightest idea when this horse became a roarer. It is quite possible he may have become a roarer within the last two or three months—that is assuming he caught cold or had been hard worked. If he was a bad roarer before, and not worked for the last few months, I think that would be in his favour, it would put him in good condition. A horse may have defects in the most important organs in the whole body, but he cannot perform the amount of work a sound horse will do. He can do slow work, but he cannot go in double harness work, which is fast work. On clay land he would be able to work, but he would do it under a certain amount of distress.

By the Court: (Q.) Is that a warranty against unsoundness that might interfere with a good working horse? (A.) It is more a legal question what that warranty is. If I were to buy a horse with a warranty of that nature I would expect him to do the work I put him to. I consider this horse is not fit to do the amount of work he should do. Roaring is a kind of unsoundness that would interfere with the horse being a good worker. I have seen a roarer much worse than this, and do good work, but yet not considered a good worker. This horse will be worse some days than others probably, according to the treatment he is subjected to.

For the defender the following evidence was led:—

James Keyden, cattle salesman, Stirling, deponed: I have had considerable experience in horses both in selling them at sales and also keeping them on my farm. I know the horse in question. I saw it with defender before the sale to pursuer. I have driven the horse. My opinion is that it was a first-class horse. There was no defect about it at that time, it ran beautifully, and was a high stepper. I used to admire the horse very much. I saw it last Friday when they were galloping it up and down the yard. It was the least thing bad in the wind, and that after galloping it up and down the yard seven or eight times. I saw it to-day again. I went out to the farm to see it, and saw it working in the plough. It was a good worker. We drove it into Stirling. There were five of us in the waggonette, and we came to Stirling at a pretty smart pace. The horse sweats because he is soft. He was not blowing nor making the least noise. I could have sworn there was nothing wrong with his wind. It worked well in the plough, just as well as any horse ever I saw.

Cross-examined: I have driven the horse in my own gig often. I would just drive it at an ordinary pace. I never pushed it. I never drove it for more than two hours at a time. I ploughed with the horse to-day for half-an-hour on a hilly plot of soft stubble land, where the crop is still standing. It was not soft lea. I am prepared to swear there was nothing wrong with his wind to-day. If I had not heard him make a slight noise on Friday I would have said he was perfectly sound. I know what a roarer is. I consider a roarer is not quite sound, but I would not say he was not a good

worker. I have seen a roarer hunted all day from 11 a.m. till night jumping in the hunting field, and at night none the worse. A roarer will, in my opinion, work quite as well as a thoroughly sound horse.

Re-examined: I have often sold horses slightly affected in the wind as good workers. A man who buys a horse that is a little affected in the wind always expects that it should be a little cheaper.

William Williams, principal, New Veterinary College, Edinburgh, deponed —I have had considerable experience among horses. I have seen the black horse in question on Thursday last in Stirling. I examined him carefully, and my opinion is the horse makes a little noise, but that does not prevent him in the least from being a good worker. I examined his feet and found nothing at all wrong with them, and no symptoms of anything having been wrong. The shoes were off. I examined the feet carefully, and gave him a severe test for his wind. He makes a slight noise, it is not a very bad case. The warranty now read to me is a true description of the horse as he is at the present time. I have heard a very much worse-winded horse than this going in the Royal carriages. I would not say he is a sound horse. That warranty is different from a sound warranty. The horse is what we call "serviceably sound." The horse has grand action, a high stepper, and a beautiful goer.

Cross-examined: I examined the hoofs of the animal carefully, they were very much alike. I did not notice that the fore right hoof differed from the other materially. There is no well-marked ring on that foot. No one of the hoofs has a ring. If there was a ring it would not indicate any unsoundness; if there were a series of rings running into one another at the front of the hoof, that would indicate Laminitis, but there is nothing of that kind. Laminitis is inflammation of the foot. It is brought on by two causes, and may pass away or it may become chronic. If a horse had been affected with Laminitis a good deal might be done to amend the appearance of the feet by careful shoeing and paring. Marks of Laminitis can be obliterated by careful rasping. Supposing a horse had had Laminitis upon him it would detract from his usefulness and market value. In regard to the wind of this horse, I should call him a whistler. He whistles and it is likely he will whistle all his way through the world. Whistling constitutes legal unsoundness. Roaring and Whistling are that the one sings bass and the other sings tenor. I would not call him a roarer. A horse that is a whistler is good for all kinds of farm work. There are many roarers who do all kinds of work. There are some roarers that could not be warranted for anything; they are quite useless. There are many roarers that can do a good day's work, and go on at that for a week or more. Whistling and Roaring are diseases of the larnyx. I cannot say what the disease in this animal arose from. The horse is fat, and it may arise from that. In the condition in which I saw the horse he would be able to do the same work as a sound horse on a farm, which was fairly difficult to do day after day. He is capable of doing a fair day's work on a farm. He is not so valuable as a sound horse, but he will do a day's work with any sound horse. He is not so valuable as a sound horse simply because he is an unsound horse. A horse that has something wrong with the larynx is just as able for years to do the same work as a sound horse, except for hunting or very fast work of any kind. There are many horses that are valuable, but have been rejected for hunting for their wind, and these are bought regularly for harness purposes. This horse, for weeks together, would be able to keep up with a sound horse in harness.—(Q.) Why is Whistling called unsoundness? I see a decision to-day by an English judge that Roaring was no unsoundness. (A.) A roarer is best suited for slow work. A roarer is not so valuable as a sound horse in the same way that a piece of cloth damaged by water would not bring the same price as a twin

piece that had not been so damaged, though both pieces were equally good to wear.—(Q.) Will a roarer wear as well as a sound horse? (A.) Yes, for years.—(Q.) For years? (A.) Yes, but not for ever.

By the Court: This horse's feet were rather flat, but he did not put his heel down first, but steps fairly and well. A horse with flat feet and high action is apt to injure his feet. A horse that has had Laminitis is liable to take it again on a slight cause. The shoes were off when I examined the feet. He was well shod in an ordinary way, and went remarkably well.

Hugh Brock, veterinary surgeon, Glasgow, deponed: I have been twelve years in practice in Glasgow. I saw the black horse yesterday at Torbrex Farm. I saw him working in the plough. I saw him driven to Stirling immediately after he was taken out of the plough. He was a very good worker. You could not hear him making any noise in the plough, nor when we were driving, until we went down to listen, and then we heard a slight noise. I would say he was a slight roarer. I saw him working about a quarter of an hour, but he had been working about an hour. I made a careful examination of this horse, and found him sound in everything, except as regards his wind. In this case that is not against his being a good worker; it is not so serious as to interfere with him in the least. I have seen thousands of horses far worse that were considered good workers. I examined the feet of the horse and found them perfectly sound; there were no symptoms of any disease. If such had existed it would have shown itself. (Shown warranty No. of p.) Depones—That is a true description of the horse so far as I have seen. I have not the slightest hesitation in saying that the horse is a good worker.

Cross-examined: The only time I saw the horse was during the time he was in the plough. If there is anything wrong with the wind it is easy to find it out. In the plough you could not detect anything wrong; it was only when he was driven fast in harness, and even then you could not hear it unless you came out and listened. We drove about two miles. That was the only time I saw him driven. There is a particular infirmity of the wind known as Roaring. A roaring horse is unsound. They do not sell for so much money in the market because of that defect. That does not mean that the horse is not able for as much work as a sound horse. Roaring is a disease of the larynx, and it may, if very bad, affect the horses staying powers. It usually does get worse; it is a progressive disease. I examined the feet very carefully. I noticed no difference between the two fore feet. They had the appearance of healthy feet. Laminitis is a disease that affects the usefulness of an animal, if severe. If it is so severe as to be apparent, you will have symptoms of it twelve months afterwards. There are plenty of horses with Laminitis that work at farm-work. Unless a horse was very bad, he would be able to work as well as any other horse. Laminitis interferes with their marketable value, as they are not so suitable for road or harness-work. He might be able to take his pull along with a thoroughly sound horse; it depends on the degree altogether. Laminitis will come back on slight cause. If a horse was to take a severe cold, that might bring on Laminitis. I have seen scores of cases of temporary roarers. A whistle is a sharp shrill sound; a roar is a deep sound. Roaring is worse than whistling. Neither a roarer nor a whistler are pleasant to drive.

By the Court: I think this was a roarer. I did not try the horse in the saddle. I saw him run home in the waggonette. A roarer would not drive for half-an-hour without showing symptoms of it. This horse had good feet. He is a good horse of his class. As he stands, he looks like a £40 horse. If thoroughly sound he would have been worth a few pounds more. The sound of Whistling or Roaring alters, and one time he may whistle, at another roar, all from the same cause.

John Dickson, V.S., Glasgow, deponed: I have been nine years in practice. I have a pretty extensive business. Andrew Menzies, who has 170 horses, is one of my customers. I have seen the horse in question, yesterday, at Mr. Walker's farm. I saw him work at the plough, and also in the machine driving. He was in the plough from twenty to thirty minutes. He wrought well, and I considered him a first-class worker. He did as much work as his neighbour. He was proud of his work. He made no noise in the plough. There were five people in the machine including the driver. It ran well and did not make any noise. At Stirling I went down out of the machine and examined him as to his wind, and could hear a slight noise. I found his wind affected very slightly. I made a careful examination of the horse afterwards, and found he is a slight roarer. Otherwise he is thoroughly sound. That is nothing against his being a good worker. Menzies has a great many horses far worse than him, and they are at work every day. I examined the feet of the horse. He has a pair of capital fore feet, thoroughly sound. There was no symptom of disease being in the foot. If there had been disease I believe I would have detected it. Feeding this horse on soft food for six or eight months, and keeping it in the stable, would make it soft in the wind, and even a thoroughly sound horse would be affected. For single and double harness, and for farm-work, this horse is truly adapted. (Shown warranty No. of p.) That is a true description of the horse; I have no hesitation in saying it. There is nothing peculiar about the feet at all.

Cross-examined: I just saw the horse this one time. I did not see anything except the ploughing and driving I had with it. I am unable to say from what the Roaring in this horse proceeded. A roarer can do and last as long as a sound horse. He will do the same amount of work. Roaring is a progressive disease in some instances. I do not think it is so in every instance. Roaring gets worse in most cases. I would reject a horse that roared, because it was a disease that was likely to get worse. I have seen roarers do a fair amount of work for years, but latterly, if the disease were progressive, it would affect their usefulness, and they would not be able to do the work that a sound animal could do. That applies more to harness work than to farm-work. A horse that is a roarer is not able to do the same amount of all kinds of farm-work as a sound horse. A horse may be a roarer and yet a good worker. You cannot test a horse better than by a sharp gallop with a man in the saddle, and then drive along the road. Sometimes they are tried with a sudden jerk to a side, but the ordinary way is to gallop or canter them, or if a roarer, to make them jump suddenly.

John Mitchell Stewart, V.S., Stirling, deponed: I have seen the black horse in question. I saw it first on the 6th May last. It was then in my forge. I examined its feet at that time. I found it had good feet, thoroughly sound. There were no symptoms of disease. If there had been I would have detected it. So far as its feet were concerned its feet were thoroughly sound. I saw him last week working on Torbrex Farm. He was in the plough. He worked very well indeed. I did not observe anything wrong with his wind. He was slightly affected in his wind, but it did not interfere with his work. He was in the plough nearly an hour, judging from the amount of work done. It was working as well as any horse ever I saw. He was a first-rate horse in the plough. I drove into Stirling with the other four in the waggonette. I noticed a slight defect in the wind when driving. I made a careful examination of the horse afterwards, and I found there was nothing wrong with the wind, but a little noise, a slight noise, which, unless you put your ear to his nostrils you could not detect it. That does not interfere in the slightest with the horse being a good worker, and never would interfere with him in his work. There are hundreds of horses far

worse which it is never dreamt of calling bad workers. The warranty describes the horse in perfectly true terms. I did not see him in double harness, but I saw him in double yoke in the plough and single harness and he did his work well. I consider it a true description of the horse.

Cross-examined: We had the horse in the plough and waggonette. We had a gallop. There was a man by his side in the plough, but there was nobody on his back. The professional way to test a horse is to put him to any severe exercise. This horse was in severe exercise when he was in the plough. It was quite sufficient to satisfy me that the horse's wind was up as high as it nearly could be—quite as much as if he were galloping. There was nobody on his back. I saw the horse tried up and down, and turned against the wall suddenly; if he was a roarer, an excessive roarer, he would grunt. I should not call it roaring, something like thick wind. It was a very slight noise. Thick wind is a blemish; it may arise from inflammation. If the horse was kept inside and fed up, and suddenly taken out, you would find its wind in the same condition. This horse, if a thoroughly sound horse, would be worth eighty guineas, and he was sold for £40. He is a gentleman's horse, and it is not nice to have him make that noise. I would object to the horse, because of this unsoundness. He will never be a roarer as long as he lives. It will not mend altogether, but it might be improved very much if the horse was put on regular food and work. If he was put on bulky food he would show it more. When a horse has thick wind it will bring him down a half-in-price—the difference is just between a sound and unsound horse. The noise is not likely to increase. Roaring is likely to increase, but that depends upon the case. Roaring does not decrease the value of a horse as a worker. Recovery from Roaring varies according to the case. I have seen a roarer do good work as long and as well as a sound horse. The horse was ploughing furrows nine inches deep, and six to eight inches broad, and the land being wet at the time made the work more difficult. In a bad case of Laminitis the symptoms do not always disappear. A symptom of Laminitis is that the horse puts his heel to the ground first. If Laminitis is present there is always structural change. This structural change weakens the feet, and a horse with that would not be so useful as a horse without it for ordinary work. He is not so good for going on a rough road or stony ground, but that depends on the nature of the ground. There is such a thing as Chronic Laminitis, but it is seldom seen. When it becomes chronic it affects the value of the horse very much.

By the Court: The four of us after our examination of the horse were all of one mind—there was no room for deviation.

The Sheriff has pronounced the following interlocutor:—

Dunblane, 8th October, 1881.—Having heard parties' procurators on the closed record, proof, and whole case, finds, in point of fact, that on the 23rd November, 1880, the pursuer purchased from the defender a black horse at the price of £40, and that on the following day the pursuer took from the defender delivery of the animal and paid the price; that the conditions of the purchase, as shown, both by the defender's own statement of what was then agreed to, and by the written warranty thereafter given, were that the horse was in all respects a good working horse, and, specially, that it was quiet in double and single harness, and a good worker in all kinds of farm work; that on 29th the pursuer returned the horse to the defender as being unsound in wind, and as therefore not fulfilling the conditions of its purchase Finds that the horse was, in point of fact, then so unsound in wind as not to be conform to the conditions of the purchase: and finds therefore, in point of law, that the pursuer was entitled to return the horse to the defender, and that, having done so timeously, he is now entitled to repayment from him of the said price of £40, with interest as sued for: therefore decerns and or-

dains the defender to make payment to the pursuer of said sum of £40, with interest thereon at the rate of five per centum per annum from the 24th day of November, 1880, till paid; for which decerns in the pursuer's favour against the defender: further finds the defender liable in expenses to the pursuer, of which allows an account to be given in for taxation, and remits the same, when lodged, to the auditor of Court to tax and report, and decerns. (Signed) JOHN GRAHAME.

Note.—The question at issue in this case depends, in the first place, on the conditions of the bargain under which the pursuer purchased from the defender a horse, which the pursuer alleges he found after delivery to be so unsound in wind as to entitle him to return it, and to obtain repayment of its price. The materials for determining the conditions of the bargain are—first, the parole evidence of witnesses as to what was said and agreed to by the parties at the time of the purchase; and, secondly, the written evidence of the warranty which the defender sent, after the bargain had been concluded, to the pursuer as expressing the conditions of the purchase. To both of these kinds of evidence the Sheriff-Substitute thinks that he is entitled to look in deciding this case. If the written warranty had been given to the pursuer at the time of the purchase, and been then accepted by him, it would, of course, have been necessary to hold that the conditions of the sale were determined by the limits of the written warranty given and accepted, but the warranty not having been given at the time of purchase, and never having been accepted by the pursuer as correctly defining the terms of the bargain, parole evidence as to what took place becomes admissible, and the whole circumstances of the transaction must be given effect to in explaining and determining the conditions of the purchase and the rights of parties. Now, looking at the whole evidence thus afforded, there can be no doubt that the horse was sold to the pursuer as being a particularly good working horse, and that, except in so far that the defender alleges that no warranty of absolute soundness was given, his case throughout has been rather to maintain the character of the horse than to limit the conditions of the bargain by an allegation of merely inferior warrandice. The price paid, however, shows that the horse was not sold as being to any important extent an inferior animal. The question, therefore, now is, Has the pursuer succeeded in proving that the horse was found, upon trial, to fall so far below the character given by the defender, both at the time of the purchase, and afterwards by his written warranty, as to entitle the pursuer to return the animal, and obtain repayment of its price? On record the pursuer alleges that in respect both of the horse's unsoundness in wind, and of its suffering from the disease of Laminitis, he was entitled to return the animal. Of these allegations, that of unsoundness in wind is the really important one, and is, moreover, the one for the consideration of which the evidence furnishes the better materials. Whether the horse was suffering from Laminitis or any kindred disease at all is a question on which high veterinary authorities have decidedly and strongly differed, and on this point the Sheriff-Substitute feels himself unable to determine whether Principals M'Call and Whalley, or Principal Williams and the veterinary surgeons who support his view, are right. He is glad to think that there are sufficient grounds for deciding the case without being obliged to attempt the difficult task of weighing and determining the value of the opposite opinions of these veterinary experts on the obscure question of the alleged Laminitis. Interesting as the question is in a scientific point of view, and the one which it would be necessary to determine if the point at issue were one of absolute soundness, its importance is removed by the general agreement of the witnesses on both sides that, whether such a disease ever existed or not in this horse, it could not have been at all severe, and had been cured, and that the usefulness of the animal

as a good worker remained thereby unaffected. It is, moreover, to be specially observed that when the horse was returned no objection was made on the ground of any alleged Laminitis by the pursuer, whose own experience and knowledge of horses would in all probability have led to its detection by him had it existed to any appreciable extent. Though the condition of the horse's feet may possibly not have been altogether satisfactory, no defect has been established sufficient to prove the horse in that respect disconform to the conditions of its purchase. It is further to be noticed that whatever value is to be attached to the alleged grounds for believing in the existence of this disease, the evidence of these was stronger at the date of the purchase than it has ever been since, for all the witnesses agree that this disease has not developed since the date of the purchase, and does not now interfere with the horse's usefulness as a good worker. The question of the horse's soundness in wind is really the important point, and here we have come on clearer ground, for every one admits the existence of unsoundness to some extent, the question being one solely of degree. On this question we have the same veterinary authorities at issue, but now there is not the same difficulty of decision. The question is not, as in the case of the alleged Laminitis, one of pure scientific veterinary diagnosis. It needs no special scientific knowledge to understand and appreciate the symptoms and effects of the disease of "Roaring." This is no obscure defect, and any intelligent observer can testify to its existence in a roaring horse, when the animal is properly tested. In the present instance, the disease was discovered by the pursuer and his coachman so soon as the animal was tested, and the Sheriff-Substitute holds that, notwithstanding the statements of Mr. Walker's servants, it has been proved that the horse was returned to the defender on the expressly-stated ground of unsoundness in wind. Both the pursuer and his coachman depone to their several trials of the horse, and as to its having been returned distinctly and formally on the ground of that unsoundness. The evidence they give of the testing of the horse is very clear, and the Sheriff-Substitute thinks that nothing has been adduced in the farther evidence of the case to diminish in any way the rule of their testimony. On the whole, he thinks it has been strongly confirmed. No doubt there is a considerable amount of evidence adduced by the defender, with the view of showing that no unsoundness was exhibited on certain occasions, when the horse was driven in harness and worked in the plough, which interfered with the horse's ability for its work. But the character of the tests then employed was not satisfactory. It is remarkable that on none of the occasions when the defender's witnesses tested the soundness of the horse's wind, was the horse saddled and galloped, as is usually done in such cases, nor was he on any of these occasions put to work that can be characterised as at all severe, either in driving or in the plough. In reference to the latter trial, it is noteworthy that the horse was worked alongside of another animal who was described by the defender's servant as a "proper roarer," and in whose company the horse in question would appear to great advantage. In the case of a horse which is confessedly sold as an inferior animal, and for a comparatively low price, the presence of a slight degree of unsoundness in wind, though not disclosed at the time of sale, might not be held as sufficient to entitle its purchaser to return the animal, but in the case of a horse sold with such a warranted character as was given in the present instance, and for such a price, the discovery on trial of anything like well-developed Roaring (which Principal Williams himself characterises as a progressive disease) must, even though the horse may still be rightly described as a serviceable horse, be held to constitute a sufficient ground for return. On the whole, the Sheriff-Substitute thinks that the horse in question having been found, in respect of unsoundness of wind, to be disconform to the conditions of its

purchase, the pursuer was entitled to return the horse to the defender, and is now entitled to repayment of its price. (Intld.) J. G.

Pursuer's agents—Messrs. Barty and Thomson, Dunblane. Defender's agents—Messrs. A. and J. Jenkins, Stirling.

An appeal against the above judgment has been taken to the Sheriff-Principal.

Army Veterinary Department.

Gazette, November 29th.

VETERINARY DEPARTMENT.—Inspecting Veterinary Surgeon J. Tatam, half-pay, has been placed on the Retired List; Veterinary Surgeon (First Class) W. Hall retires on retired pay; Veterinary Surgeon (First Class) G. Longman, half-pay, to be placed on retired pay.

In consequence of a large reduction in the Veterinary Department, the admission of candidates is suspended until further notice.

Obituary.

THE death is reported of WILLIAM A. WHEATLEY, M.R.C.V.S., of Reading, on November 29th, in his sixty-fifth year. He graduated in 1839.

J. T. ROBERTS, M.R.C.V.S., of Long Sutton, died suddenly, of spasm of the heart, on November 13th, while engaged in his usual duties, and accompanied by his assistant, Mr. Millward. He graduated in 1858, and had been in practice for twenty-three years at Long Sutton, where he had gained the respect and confidence of all who knew him, and who now lament his early decease—he having only reached his forty-fifth year.

We have to add to the above deaths that of JAMES BROOKES, M.R.C.V.S., of Pilkington, near Manchester, who graduated in 1843.

Correspondence.

MR. REYNOLDS AND THE VETERINARY SURGEONS' ACT.

SIR,—As those who are responsible for the correct publication of the Council proceedings in the professional journals have thought proper to furnish an incomplete report of the October meeting, I am compelled to request the insertion of the following remarks in your next issue.

I abstained from replying through the media of the monthly periodicals to the somewhat severe criticisms that have appeared in the VETERINARY JOURNAL, from the pens of yourself and Mr. Thomas Greaves,* upon the course of action taken by myself and others with reference to the passage of the Veterinary Surgeons' Bill through the House of Commons, in the belief that opportunity would be afforded for explanation in the Council-chamber, and that by reading an impartial report thereof the general body of the profession would be enabled to judge how far our actions were justified by circumstances. I complain that as the President's congratulatory address was permitted to appear, if not in full, at least at considerable length, it would have been but equal justice had the observations made in reply thereto been treated in like manner.

* The effusion of the contemptible individual who wrote slanderous aspersions under cover of a *nom-de-plume* cannot be noticed, at present at least.

Some of the remarks bearing upon the subject having been suppressed, intrusion upon your pages has become a necessity.

At a meeting of Council on 1st July the President made a long statement with reference to, and in favour of, the Veterinary Surgeons' Bill as it there stood, after which the Secretary read over the draft bill. I confess to have been the most stupid member present, and naturally envious of the very acute perceptive faculties seemingly possessed by others, who so readily and completely grasped the details as to be able not only to discuss the merits of the bill, but to be then and there prepared to recommend its adoption. I, perhaps unfortunately, inherit a habit of liking to think for myself, and a dislike to accept the dicta of other persons when there is a chance of obtaining a knowledge of fact, and therefore preferred to read over the proposed Act of Parliament before committing myself to a vote upon it. *Before I could obtain a copy for perusal I learned it had been almost unanimously approved by the Council, and consequently, an attempt to have it re-discussed in the Council-chamber appeared to me hopeless.**

After reading a copy of the bill, I came to the conclusion that it was anything but what I believed the profession had long desired by the term "penal clause," but that it was in substance, but a copy of the Dentists' Act, and one unsuited to the wants of the veterinary profession.

Finding others, who in common with myself believed the whole tenor of the Fifteenth Section was for the direct benefit of unqualified men, and to the disadvantage of present members of the College, we hesitated not to take such steps as were considered most likely to obtain an ammendation of the objectionable section.

If our judgement was wrong, and our estimate of the requirements of the profession unjustified, we have still the knowledge that our endeavours to get Clause 15 suitably amended were at least as loyal, as honourable, and as consistent as was the action of those members whose original object in promoting a protective bill was precisely the same as our own, but who unhesitatingly abandoned their position, and accepted a clause insufficient to protect the interests of present members of the profession.

The complete justification for our line of conduct lies in the answer to the question, What did the veterinary profession desire and expect from the obtainment of a "penal clause"? The question has been answered repeatedly, and invariably have the replies in substance been that the privileges granted by the Charter of Incorporation, in 1844, including the sole right to the title Veterinary Surgeon, by members of the Royal College, should be legalized by statutory enactment. Was not the question thus answered by the whole tenor of the original draft bill emanating from the Parliamentary Committee of the Council? Was it not so answered in a widely disseminated printed circular, a copy of which may be found in the February number of the VETERINARY JOURNAL? Was it not again answered by Mr. Greaves in his very able paper upon the "Penal Clause"? and have not similar answers been re-echoed from all sides by members of the profession? Let gentlemen read, if they have not read, these several productions, and compare them with the 15th Section of the existing Act, and they will, I think, wonder how those who originated and supported the tenets of a "penal clause," could have been so wanting in back-bone as to abandon those principles for the attainment of an object intended to raise the status of unqualified existing practitioners.

The President explained to the Council that he urged upon the Government, and fought hard and valiantly for, an alteration of the objectionable features of Section 15, and that he failed upon the point of exclusive privilege.

* The italics are our own.—Ed. *V. J.*

No one more than myself is an advocate for the preservation of vested rights and interests, but I fail to see what vested right unqualified practitioners can possibly possess to a title granted thirty-seven years ago solely for the use of members of the veterinary profession. I fully believe that Mr. Fleming did strive, and that he accomplished, too, as much as any one man could hope to do; but that is no excuse for failure. What is an insuperable difficulty for one man is often an easy task for combined effort. Ignoring the influence of the profession, the bill was pushed on at an inopportune time, and the result has been failure to accomplish the one object essentially desired by the general body of the profession.

For some reason, the so-called opposition to the bill by members of the profession has been magnified. So far as I know, the bill was never in danger, and most certainly not after July 21st, from opposition raised by myself and those acting with me. Although greatly desiring to see a substantial amendment of Clause 15, we were too much alive to the responsibility that would rest upon us had the bill been lost through continued opposition; and therefore, failing to get a major concession, except at the risk of endangering the passage of the bill, we assented, as the best obtainable concession, to a minor alteration of the clause suggested by Mr. Whitley, M.P. for Liverpool. That such minor alteration was an improvement to the bill, and acceptable to Mr. Fleming and to the House of Commons, is testified by the letters at foot hereof.

The whole credit of any benefit that the veterinary profession may derive from the Act belongs to those who supported the bill. I have not the slightest claim nor desire to participate therein, but conceive it to be both my duty and my privilege to make known the objections I held to the Fifteenth Section. I am contented to have striven for a substantial emendation, but am not contented to have my reasons misconstrued and my conduct maligned as treacherous and disloyal.

Now that the bill has become law it will afford me as much pleasure to assist in carrying out its provisions, so far as they can be administered for the interests of the profession, as if it had been framed more in accordance with my estimate of existing requirements.—I am, Sir, yours, etc.,

Liverpool, 16*th Nov.*, 1881. RICHARD S. REYNOLDS.

(*Copies.*)

Wanderers' Club, Pall Mall,
July 29th, 1881.

Dear Sir,—I thank you heartily for your most welcome note, as it has removed a heavy load of anxiety from my mind. I have just seen Mr. Mundella, and he agrees to bring forward your amendments or suggestions in Clause 15, in his name. With the proposed alterations I am quite satisfied, and thank you for making them, as they simplify and greatly improve the clause. I do hope you will be successful in your efforts to get the bill passed, as it is very urgently needed, and will be a great boon to all concerned. Again thanking you for your kindness and courtesy,

I remain, yours very truly,

EDWARD WHITLEY, Esq., M.P. (*Signed*) G. FLEMING.

185, Piccadilly, 20*th August*, 1881.

Dear Sir,—As Mr. Mundella stated, he would prefer not moving the amendments, but that he would rather I did so, and that he would accept them. I moved them when the Bill came on this evening, and they were accepted without much discussion.—Yours very truly,

To R. S. REYNOLDS, Esq. (*Signed*) EDWARD WHITLEY.

We publish this correspondence *literatim et verbatim*. At the same time, extreme regret must be expressed that further allusion should be

made to a painful, necessary subject, over which it would be well to draw a veil, until the future historian of Veterinary Medicine in these kingdoms could have treated it fully and impartially. However, this was not to be; and therefore, in justice to the Council of the Royal College and to the profession, no less than to individuals alluded to in the correspondence, we are compelled to point out, to some extent at least, why we have condemned Mr. Reynolds's conduct in this matter, why we have designated it as we considered it deserved, and why we are indisposed to abate or to modify in the faintest degree the opinion we have already expressed with regard to it. It is necessary to notice this correspondence at some length, because Mr. Reynolds not only tells a very small portion of the story, which he thinks will justify him in the unfortunate course he took in relation to the Bill, but he makes gross misstatements in doing so, and omits altogether allusion to that part by which we submit his conduct stands condemned.

Mr. Reynolds, as a Member of Council, knows—or at least ought to know—that any complaint with regard to reports of proceedings of Council should be made at the meetings, not in the public press. We had nothing whatever to do with curtailing his speeches. Any sympathy he may hope to elicit, by endeavouring to show that he has been unfairly treated, cannot be granted him. The report, wisely, we think, omits all, or nearly all, reference to what may be regarded as "washing dirty linen in public."

The chief charge against Mr. Reynolds—a charge which he makes no allusion to—is that he, being a member of Council, betrayed the Council by acting in direct opposition to its decisions, and surreptitiously, at a most critical time, and with a full determination to thwart it in its efforts. Whatever his motives may have been, it is certain that by his action, and that of the two or three individuals who allied themselves with him, the measure which was intended to effect so much good was seriously imperilled, and an incalculable amount of toil and anxiety thereby imposed on those gentlemen who had been made responsible to the Council for its promotion.

It is untrue that the profession has not been consulted regarding this Act. At every step, whenever possible, the Council took ample time to consider the three bills—or rather the one bill thrice amended; and the profession outside the Council, individually and collectively, has been kept as well informed through the secretaries or presidents of societies as circumstances would permit. To them we owe a large measure of gratitude for assistance on two important occasions. At an unusually full meeting of Council on July 1st, the bill, very much as it now stands, was brought under consideration. The President explained that the legal advisers of the Government had decided that in law our profession have no exclusive right to the title of Veterinary Surgeon; that every possible effort had been made, by petitions from veterinary, medical, and other powerful societies, as well as by the influence of most influential persons, to make that title our own—a title the exclusive retention of which was *at least* as important to every member, and was regarded by the President as desirable, as could be felt by Mr. Reynolds; yet, that neither the Government nor Parliament could be induced to accede to the full letter of our urgent prayer on this subject. Mr. Reynolds heard all this in explanation. The Council, like practical men, seriously considered the facts, and the alterations made necessary thereby in the amended bill, and finally *unanimously* resolved that it was satisfactory, and authorized the President to proceed with it. Mr. Reynolds, for reasons best known to himself, had retired immediately before this important moment, but he was, as he admits, soon after informed as to the decision of the Council. He complains that no opportunity was given him to consider the amended bill at this meeting, and no copy of the bill was handed to him until it was too late for him to state his objections to the Council. Our

reply is, that he had the same opportunities as every other member of the Council; that when the bill was discussed, it was open to him to have asked for time to consider the amendments, but that he did not ask for time; that he did not challenge the alterations by a motion; that he did not ask for a copy of the altered clauses—in fact, that he gave no intimation of his intention to offer opposition before he left the room. We submit that Mr. Reynolds, on his own showing, neglected the opportunities given to him for deliberating on the alterations referred to; that he was present when the reasons were stated for the alterations, and did not protest against their adoption, and did not even ask to have the alterations given to him in writing for more exact examination, but practically abandoned them, and his duties in reference to them, by leaving the Council meeting while his colleagues were engaged in considering the alterations; and we submit that consequently he was afterwards bound to accept the decisions the Council arrived at, or request the President to call another meeting for the purpose of considering his objections (which he did not do); and, finally, we submit, according to established rules of public life, he was bound to resign his seat at the Council Board before attempting to thwart the decisions of the Council. His conduct, moreover, is something more than disloyalty to the Council; it is an arrogant assumption of authority. Mr. Reynolds evidently endeavoured to put the Council in the weakened condition of a "house divided against itself;" but by placing himself before members of the Legislature as the representative of dissenting veterinary surgeons, he tried to raise himself up as an authority in the profession of equal weight with the executive body. An individual member of a Council which represents an entire profession, who regards himself as equal to the aggregate members of that body, is scarcely worthy of the confidence of his constituents, and ought not to be surprised when his conduct is almost unanimously condemned by that profession.

But we pass on to consider Mr. Reynolds's conduct in detail.

The bill passed the House of Lords, and Mr. Mundella took charge of it in the Commons. At an interview with that gentleman, the President informed him that the Council had *unanimously* approved of the measure, but that a clause giving exemption from serving on juries would be a great benefit to the profession. The proposal to insert a clause to that effect was favourably received by the Vice-President of Council. The bill passed the second reading, and was considered safe; when, to the astonishment of the President, a letter was received from Mr. Mundella, stating that serious opposition was being got up against the bill, and unless it could be removed it would prove fatal to its further progress. He enclosed a letter forwarded by Mr. Reynolds to Mr. Whitley, M.P. for Liverpool. This letter, bearing the arms of the Liverpool Corporation, and addressed from the Municipal Offices (as are all Mr. Reynolds's subsequent letters we have seen on this subject, probably to give them a fictitious importance), is dated July 9th, and reads as follows (the italics are our own):

EDWARD WHITLEY, Esq., M.P.

Dear Sir,—You are probably aware that there is a bill relating to veterinary surgeons recently passed through the Upper House, and is expected to be presented to the Commons next week. A number of us disagree with several clauses of the measure, and I write to ask you to give consideration to the bill, and interest yourself against those clauses that appear to you objectionable. I particularly beg to direct your attention to Clause F 1,* which will legalize the assumption of the title of Veterinary Surgeon by all the

* Now Clause 15.—ED. *V. J.*

quacks in the kingdom who have been five years practicing. You may not know that by Royal Charter of 1844 the title is granted solely to members of the Royal College of Veterinary Surgeons, and our aim is to obtain the sole right of using it by parliamentary enactment and a penal clause. We have no wish to prevent quacks from practicing, but we desire that the public shall be able to ascertain whether or not a man has passed his examination and is qualified by special education to practice his profession, and it is on that account that we want our Charter of 1844 to be confirmed by Parliament. It is plain that the objectionable clause will tend to lower the already *low social status of veterinary surgeons* by compelling the Royal College to register a host of quacks who have not the slightest claim to recognition: *their vested rights of being allowed to practice we don't wish to interfere with*, and surely they have no vested interest in *membership* of the College they have never had any connection with. If the clause cannot be altered to suit our desires, it is the wish of a *very large* section of members of the College *that the bill should not pass the Commons.* I therefore have ventured to address you, in the hope that you will consider the bearing of the bill, and if you see it in the same light as we do, to exert your influence in getting an alteration of the clause we particularly object to, *or* to prevent the bill as a government measure from passing through the House. I will not trouble you to acknowledge the receipt of this letter, knowing you have many claims upon your time. Believe me, etc.,

RICHD. REYNOLDS, M.R.C.V.S.

This letter was shown to the principal members of the Veterinary Congess then assembled in London, and perhaps it was as well that Mr Reynolds was not present. There was but one opinion with regard to his conduct. It will be seen that it was only by the merest accident that his clandestine action was discovered, and his position as a member of Council made this all the more serious and reprehensible. It was thought that a man of sense and honour would first have resigned his seat at the Council, and then have openly declared his intention of opposing the other members and the profession in their attempts to carry the bill through Parliament. The statement that there was no time to take any other action will not for a moment bear examination. The By-laws of the Royal College provide for a meeting of Council or of the profession being held at once, on requisition being made; and this meeting would most assuredly have been convened by the President, had the slightest intimation been expressed. But no such requisition was made, and an interval of nine days elapsed from the Council meeting until Mr. Reynolds wrote to Mr. Whitley, and it was not until August 23rd (fifty-four days after the Council meeting) that the bill passed through committee of the House; so that the plea of want of time cannot be accepted.

The Royal College of Veterinary Surgeons, the Veterinary Congress, by unanimous resolution, and nearly all the veterinary medical societies, immediately on the contents of Mr. Mundella's and Mr. Reynolds's letters becoming known, petitioned in favour of the bill passing as it then stood—so that Mr. Reynolds's statement was misleading as regards the profession, and his allegation that they did not understand the measure was scarcely complimentary; while the Royal Society for the Prevention of Cruelty, as well as many influential noblemen and legislators, generously supported the bill. At least two gentlemen who were attending the Congress wrote or telegraphed to Mr. Reynolds on July 20th, begging him, for the sake of the profession, to withdraw his opposition. This was probably the first intimation Mr. Reynolds received that his plot had been discovered. The following replies are worthy of note, as are also the dates, when read in relation to the statements in the letter he now addresses to us :—

Liverpool, 20*th July*, 11 p.m.

My dear Sir,—In reply to yours and supplement to my telegram, I have just returned from Manchester. Peter Taylor is stronger in his opposition to Clause 15 than I am. My opposition is that the clause must be expunged or altered (*the members who are opposing the measure in the House are in possession of the alterations I desire to see*). If the clause stands as it is the profession will be worse off than it is, at least such is my opinion and that of some others. The bill is premature: it was scarcely discussed in Council, and not at all by the profession as a body. I *entirely* disagree with the objectionable clause, and what I cannot agree with I must oppose even if beaten. I am personally sorry that you cannot agree with my views: if the bill passes as it stands I am afraid you will do at no very distant day—hope I may be wrong.—Yours faithfully, RICH. REYNOLDS, V.S.

July 21*st*, 1881.

Dear Sir,—I have given my *full* consideration to the bill *before trying to influence members of Parliament in opposition* . . . I regard the bill as hastily prepared, ill-considered, and premature, and if it is lost we shall perhaps be allowed more time to consider the provisions of the next bill. The profession generally has not been consulted upon the matter, and it is a question of minor importance to me personally. I care nothing about it, but I do not think Clause 15 is calculated to improve the status of the profession in any way. I am sorry you cannot agree with my view and do not prefer to wait for a better bill.—I am, dear Sir, faithfully yours, RICH. REYNOLDS.

Our readers will require no evidence beyond the above letters to satisfy them that Mr. Reynolds did actually place himself in deadly opposition to the bill. The members of the House of Commons who were engaged in "opposing" the Council of our profession were prompted by him—they "are in possession of the alterations I wish to see." Mr. Reynolds actually admits that he was actively "trying to influence" members of Parliament generally to oppose the bill. It will be seen also (which must be remembered further on) that his opposition was at that time being based on a "*full*" consideration of Clause 15, which he "*entirely*" disagrees with.

With regard to Mr. Reynolds's reiterated statement that the bill was hastily prepared, ill-considered, and premature, there is no foundation whatever. The subject of obtaining an Act of Parliament had been discussed for a very long time; and several years ago we introduced it at a large meeting of the profession held at Liverpool. In 1880 the bill was drafted and discussed in committee of the Royal College; on December 11th of that year it was laid before the Council and again discussed; on the 23rd of that month it was once more discussed in committee, copies having in the meantime been distributed to societies and members of the profession throughout the country. In January, 1881, it was publicly announced in this Journal, and in February appeared in it *in extenso*, and again, as amended, in May; discussed in Council on April 8th; alluded to in the Journal for June (p. 410), and copies of amended bill distributed to the profession; discussed at the annual general meeting, in May; it was explained at length, and its progress in Parliament commented on, in the Journal for July; and at the Council meeting held on the 1st of that month it was again discussed and its progress reported upon, when it was agreed, without a single dissentient, "That this Council highly approves of the bill as at present before it." So much for Mr. Reynolds's unfounded assertions as to the bill being hastily prepared, ill-considered, and premature. Besides, the following letter from the Secretary of the Lancashire Veterinary Medical Association will show that Mr. Reynolds's proceedings, which are now condemned, were unauthorized by that body, and entirely opposed to its wishes:—

Manchester, July 9th, 1881.*

Dear Sir,—I have great pleasure in forwarding you, as President of the Royal College of Veterinary Surgeons, the following vote of confidence and resolution passed at the last quarterly meeting of this Society, held on July 6th, A. Lawson, President, in the chair :—"That this Society desires to record its appreciation of the services rendered the profession by its Council, in the arduous task of promoting the Veterinary Medical Bill in Parliament, and expresses its confidence in the Council during the further stages of the Bill." "That this Society do petition the Parliamentary Committee of the Council of the Royal College of Veterinary Surgeons to secure, if possible, during the passage of the Veterinary Surgeons Bill through the House of Commons, an increase in the retrospective period, as qualifying persons to be registered as 'existing practitioners.'"—I am, dear sir, etc.,

SAM. LOCKE, *Hon. Sec.*

Mr. Reynolds states that the bill was never in any danger. The above correspondence will prove that this statement also is destitute of foundation. And in a note from Mr. Mundella's secretary to the President, dated July 19th, referring to the insertion of the jury clause, we find Mr. Mundella insisting on the danger the bill was placed in by Mr. Reynolds:—

Dear Sir,—Mr. Mundella desires me to say that no bill can be altered on the second reading. He hears from Mr. Whitley that there is considerable opposition to the bill, as the enclosed letter (from Mr. Reynolds) shows ; and he wishes me to say *that unless you can remove this opposition it will be fatal to the bill.*—Yours faithfully,

H. T. BRYANT.

A letter from Mr. Whitley gives some collateral information which may prove interesting.

The letter is addressed from the House of Commons, and dated 27th July, 1881; and after mentioning that he (Mr. Whitley) had telegrams in support of Mr. Reynolds's opposition from Mr. Stephenson, of Newcastle-on-Tyne (who, as is known, was opposed to any Act protecting the profession, and did his utmost to have the present Act thrown out), and the Messrs. Taylor and Simpson, of Manchester, adds, "I have had Mr. Reynolds with me to-day, and *they*† have abandoned the objections to the 13th Clause,‡ and have agreed to accept a SLIGHT amendment of the 15th Clause, which I have submitted to Mr. Mundella, and to which he sees no objection, and upon which, however, he would like to see you. The effect of my alteration is that there should be a separate list of existing practitioners ;§ that it should be stated distinctly that their right to practise did not make them members of your College. I think *there is no alteration to which you will object, and that it rather improves the clause, as making it more clear.* Perhaps you will see Mr. Mundella, and, if he approves, I would suggest that the clause as now amended should be put down in his name ; and I will then withdraw my amendment to expunge Clause 15, and do my utmost to get other members to withdraw, as I quite agree with you that *the bill is a good one, and ought to be supported.*

* An examination of dates leads one to the inference that after Mr. Reynolds had been overruled by the following vote of confidence of the Lancashire Veterinary Medical Association, he sat down and commenced his public attack on the Council by writing his letter to Mr. Whitley, M.P. Thus he appears in the invidious light of opposing the decisions of two executive bodies to which he belongs.

† Mr. Reynolds says nothing of this unofficial deputation's visit to London. The Council certainly knew nothing of it or its purport.

‡ This is the first we heard of any objection to this clause.

§ This provision was already made in the bill ; so Mr. Whitley wrote this sentence in error.

If Clause 15 be inspected as it stands, before and after Mr. Whitley's amendment (VETERINARY JOURNAL for August, p. 107; for October, p. 271), it will be seen that the alteration consists merely in the transposition of a few words, which in no way changes the purport or effect of the clause, though it certainly, in our opinion, makes it read better. The alteration made was not assented to to meet any objection by Mr. Reynolds, who objected to the clause "*entirely*," but only to make the meaning of its promoters more emphatic and unmistakable, which will account for the President's politic compliment to Mr. Whitley. But perhaps the strongest condemnation of Mr. Reynolds and those who acted with him, and the amplest justification of those who promoted and supported the bill, as well as of those who understand the matter, is to be found in the concluding sentence of Mr. Whitley's letter—"the bill is a good one, and ought to be supported."

Another unfounded statement made by Mr. Reynolds is that the bill is in substance a copy of the Dentists' Act. It is as widely different in its principal provisions as can well be imagined, and the most charitable construction to put upon the assertion is that he had not seen that Act.

The statement made by Mr. Reynolds that the profession did not make a combined effort to retain the title of Veterinary Surgeon, but that the President, ignoring its influence, alone acted and failed, is wholly and absolutely untrue. Mr. Reynolds must think people are very easily deceived if he imagines they will believe such misstatements. Besides, if it had been true, was not the President the representative of the Council, acting in obedience to its direction? Surely, Mr. Reynolds cannot claim for his opposition any authority whatever? The truth is that the Veterinary Surgeons Act was primarily initiated, drafted, and mainly promoted by the President of the Royal College, brought into Parliament under the auspices of the Royal Society for the Prevention of Cruelty, energetically supported throughout by the Royal College and the profession, as well as a long list of most distinguished and influential persons, in and out of Parliament. It was opposed clandestinely by Mr. Reynolds—a member of Council—and an infinitesimal minority of the profession, whom it is charitable to suppose were misled by misstatements; and openly opposed by the unqualified practitioners, who found their most powerful allies in Mr. Reynolds and his coadjutors. The only consolation these Iconoclasts are enabled to derive from their conduct being that they effectually destroyed whatever chance remained of exemption from serving on juries, proposed by the President.

With every charitable feeling towards Mr. Reynolds, the reader will find it difficult to acquit him of disingenuousness. In the above letter, he now alleges that his opposition was withdrawn to prevent a wreck of the bill. He assented to Mr. Whitley's verbal alteration within the fifteenth clause, and gave up his own radical objection to all the clause, with which he "*entirely*" disagreed, in order that the bill might not be lost. But this was not his attitude until Mr. Whitley and his other coadjutors in Parliament had come to the conclusion that the bill is a good one, and ought to be supported; for until he found his opposition would fail, he appears to have demanded (we quote from his first letter to Mr. Whitley) "that the bill should not pass the Commons unless the clause were altered to suit our desires"! Again, on July 21st he informed a correspondent that he had thoroughly studied the bill ("I have now given my *full* consideration to the bill"), the meaning of which he had been unable to "grasp" at the Council meeting. On the next day—actually the next day—he sent a telegram to Mr. Whitley in which the following extraordinary admission is made:—"After *further careful* con-

sideration I feel convinced that clause sixteen removes much that is objectionable in clause fifteen, the FULL PURPORT OF WHICH I DID NOT GRASP TILL NOW." Mr. Reynolds appears to have a fitful intellect—at first he cannot "grasp," then he grasps fully, and afterwards finds he had not grasped at all. And yet he aspired to lead an opposition against the Council. Surely up to the present moment he has failed to "grasp" the ridiculous as well as mischievous nature of his own proceedings. No wonder that he omitted all reference to the above telegram in his defence of his conduct. As regards his intelligence and consistency, the members of the profession who elected him on the Council may now form an independent judgment, as well as on the ingenuousness of his self-vindication in reference to operations he carried on privately against the Council, without notice to the Council, and which the Council discovered, and were enabled to arrest and overthrow only by good-luck or accident and much anxious toil.

Mr. Reynolds' predictions with regard to the Act will assuredly be falsified —they are now being falsified; and it must be a matter of indifference whether he lends his support in carrying it out, seeing it was obtained in spite of him, and can be administered without him. Those who had to bear the brunt of counteracting his opposition are alone in a position to testify to the danger in which he placed it. It is needless to state that, had the profession failed on this occasion, there would have been but little chance of introducing another bill in our time, and no future enactment could have been so beneficial to the profession. We say this, knowing the position of affairs. The present Act is a thousand per cent. better than the one they would have preferred, as that would have simply perpetuated quackery, imposture, cruelty, and private and public loss; though it would never have been passed by any Government or sanctioned by any Parliament. Probably Mr. Reynolds knew this—at least the Council and profession did.

That Mr. Reynolds may now claim credit for assisting in passing the bill is likely enough: those who at one time strove for disunion in the profession, and abused everyone who did not aid them, have since posed as the ardent promoters of unity, and received credit as such. Threatened at the Council-table with the opposition of the Highland Society by the Principal of the New Veterinary College, seriously imperilled by the occult antagonism of Mr. Reynolds and a small following, strongly opposed by the unqualified practitioners and their friends, and menaced in other directions, the Act, nevertheless, finally became law; and its present benefits, but still more those to come, are and will continue to be a vast boon to the profession, as well as a credit to the members of Council and of all who supported it.

We have entered thus lengthily into this distasteful subject, compulsorily, in order to justify the Council and the profession from the charge brought against them by Mr. Reynolds, of inconsistency or stupidity, or both; and also in reply to those who endeavour to extenuate Mr. Reynolds's conduct, or entirely exonerate him from blame. There are those in the profession, unfortunately (though luckily their number is extremely small), whose aim or delight it has been for years to engender "bitter feelings," sow discord, and promote disunion, by calumny or other means. The profession has always to be on its guard against these men, who, it is possible, may make the most of Mr. Reynolds's correspondence to indulge their natural propensity for stirring up strife. They will be the last to admit that a member of Council who clandestinely attempts to override a decision of that Council acts not only dishonourably to it, but disloyally to the profession of which it is the representative body; while they will also be the last to give credit to those who act loyally and honourably. These persons are insignificant in number, and their influence for evil is waning fast; so that they will soon be unfelt, as they are now pretty well unseen. But they have still to be guarded

against. The profession, as a body, was never more united, loyal, and enthusiastic than at present; and it will continue so if we have any influence. No more space can be devoted to the discussion of this unpleasant subject.]

"FITZWYGRAM TESTIMONIAL."

SIR,—Observing in this month's VETERINARY JOURNAL a letter from Mr. Thompson, desiring to be informed what has been done in this matter, we, the undersigned, have much pleasure in informing him, and all others interested, that the amount subscribed up to this date is £256 10s. 6d., every shilling of which has been placed to that fund in the Wolverhampton and Staffordshire Bank; nothing has been expended, only Mr. Adlard's two bills for two lots of circulars, a copy of each of which was sent to every member of the profession. The gentleman, Mr. Hudson, of Hull, who has received the commission to paint two full-length portraits, is an eminent and experienced artist; he has painted a bust portrait as a test, which was exhibited to the committee at Red Lion Square at the last quarterly meeting of Council, and approved. The two full-length ones—one in undress uniform, the other in civilian attire—are progressing rapidly towards completion, and will be (we feel no doubt) executed to the entire satisfaction, not only of the nobleman himself and his family, but also to the profession that is so deeply indebted to him for the many great and valuable services received at his hands. The subscription list is not yet closed.

THOMAS GREAVES, *Secretary.*

December 6th, 1881. H. J. CARTWRIGHT, *Treasurer.*

ERRATA.

In the Journal for December, p. 402, line 6 from bottom, for "*post-mortem* hæmorrhage," read "post-partum hæmorrhage."

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from: C. Clayton, A.V.D., India; W. F. Day, Stamford; W. S. Adams, A.V.D., India; R. W. Burke, A.V.D., Woolwich; R. Paterson, Downham Market; T. Greaves, Manchester; R. Rutherford, Edinburgh; H. Millward, Long Sutton; J. C. James, Thornbury; J. Clark, Coupar Angus; "Senex"; "A Student."

BOOKS AND PAMPHLETS: *H. Behrend, M.D.*, The Communicability to Man of Diseases from Animals used as Food; *G. M. Allender*, Dairying; *Dr. Falin*, De L'Age et de L'Origine de la Variole; *H. Puts*, Die Seuchen und Herderkrankheiten unserer Hausthiere; Jahresbericht über die Verbreitung Ansteckender Thierkrankheiten in Preussen; *A. Zundel*, La Peste ou Distomatose des Ecrevisses; *H. Toussaint*, Etudes sur la Tuberculose.

JOURNALS, ETC.: *The Vaccination Inquirer; Journal de Méd. Vétérinaire et de Zootechnie; Recueil de Med. Vétérinaire; Pen and Plough: Der Thierarzt; Wochenschrift für Thierheilkunde und Viehzucht: Archives Vétérinaires; La Presse Vétérinaire; Revue Vétérinaire; La Clinica Veterinaria; Deutsche Zeitschrift für Thiermedicin und Vergleichende Pathologie; Annales de Méd. Vétérinaire; Lancet; American Live Stock Journal; British Medical Journal; Medical Press and Circular; Live Stock Journal.*

NEWSPAPERS: *Minneapolis Tribune; St. Paul and Minneapolis Pioneer Press; Pen and Plough; Dublin Freeman; Montreal Gazette; Times of Natal; Freeman's Journal; Scotsman.*